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Research Article

Contribution to the Morphological Description of Some Melliferous Plants of Southern Idjwi: Cases of Burgmansia Suaveolens, Carica Papaya, Helianthus Annuus, Malvaviscus Arboreus and Mangifera Indica

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Abstract: This work is part of the morphological description of certain mellow plants in South Idjwi. These species include *Burgmansia suaveolens* (Solanaceae), *Carica papaya* (Caricaceae), *Helianthus annuus* (Asteraceae), *Malvaviscus arboreus* (Malvaceae) and *Mangifera indica* (Anacardiaceae). For each species, 10 individuals were observed in different biotopes. This allowed us to make a complete morphological description of the species studied since the biotope can play on the external form of some species. For each species, we analyzed its vegetative apparatus (root, stem and leaf) and its reproductive apparatus (flowers, fruits and seeds). After each description, we establish the floral formula of the species based on traits observed in the laboratory on the reproductive system. These floral formulas were confronted with those of their respective families. Finally, a comparison has been made with previous work by the species studied to detect the similarities and dissimilarities that exist between our descriptions and those of our predecessors.

Keywords: Morphological, Mellifers, Species, Individuals, Biotope, Vegetative, Breeder, Florale.

BACK GROUND

According to Ishak (2006), all beekeepers agree that the bee is one of the major and irreplaceable agents of pollination.

According to Du Bois and Collart (1950), the basic knowledge of bee cultivation is lacking in the African popular, who for lack of practical notions of beekeeping did not have the necessary means at the time to have much more information on the originality of honey from the floral part.

Given the very high number of mellow species on the island of Idjwi, in this work, it will be difficult for us to describe all these species because some of them have already been the subject of morphological description among the Angiosperms. This is how we will only look at the following species: *Burgmansia suaveolens* (Solanaceae), *Carica papaya* (Caricaceae), *Helianthus annuus* (Asteraceae), *Malvaviscus arboreus* (Malvaceae) et *Mangifera indica* (Anacardiaceae).

To achieve this, the various courses studied to the audience and in particular plant morphology, plant systematics and plant autoecology have helped us a lot in morphological description, classification and the determination of the type of habitats of our five melliferous species.

By working on the mellow plants, we have set ourselves the following goals:

- Contribute to the knowledge of the mellow flora of South Idjwi in general;
- Contribute to the morphological description of the mellow plants of South Idjwi;
- Know the floral origin of honey;
- Know the systematics as well as the ecological requirements of these plants;

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- Highlight the common traits of the different plant individuals that make up the melliferous species in this study;
- Create a database of the mellow plants of South Idjwi.

According to Habakaramo (2008), apart from the various reports carried out by the Asali Network on the popularization of beekeeping in South Kivu province, there have never been any studies conducted on honey plants and honey in this region. While honey is widely sold in the streets, in the village as in different foods of the city. This is how we wanted to describe some of the mellow plants of South Idjwi in order to contribute to the knowledge of the flower's floral origin.

The island of Idjwi is one of the largest island in DR Congo. The population is indigenous and some layer's practice beekeeping despite the problem of destruction of the vegetation cover that this region is experiencing. These beekeepers produce honey, which is a product used for a variety of purposes. To our surprise, we found that in South Idjwi there have never been any studies on honey plants while this island produces a sufficient quantity of honeys that are exported to the city of Bukavu, Goma and some neighbouring countries such as Rwanda.

We felt it necessary to carry out the morphological study of the mellow plants of South Idjwi. This island is a part of the province of South Kivu and exports a large quantity of honeys, on the one hand and abounds many honey plants, on the other hand.

METHODS

- **Introducing The Study Environment**

The territory of Idjwi is an archipelago of Lake Kivu and more than 20 islands and islets of which only half are inhabited. It should be noted that in the course of this work, only the southern part was the subject of this study. Idjwi, an island in Lake Kivu, located in eastern DR Congo, is located in the middle of Lake Kivu, opposite the towns of Goma and Bukavu in East Africa. With an area of 285 km2, it is the second largest lake island in Africa (Severine, 2016).

The island of Idjwi, once the administrative subdivision of the Bahavu chiefdom in Kalehe territory, had been established as an autonomous territory by ordinance 078/238 of 29 September 1974 establishing this territory. Located in the middle of Lake Kivu halfway between the city of Bukavu and that of Goma, Idjwi is the largest island in DR Congo and the second largest lake or river island in Africa.

The territory of Idjwi is bounded to the north by Lake Kivu and the city of Goma, to the south by Lake Kivu and Rwanda, to the east by Lake Kivu and Rwanda, and to the west by Lake Kivu and the territories of Kabare and Kalehe (Gombaniro , 2016).

The island is located between 1-56 and 2-8 degrees West Latitude, 28-56 degrees East Longitude, depending on the NNE-SSW extension in the Lake Axial Zone. From north to south, it will measure 40 km between Cuge and Kagi, its northern and southern extremities. From the east to the west, the width is 8 to 10 km in its southern half (Guibert 1977).

As for its administrative subdivision, the island of Idjwi is divided into two chiefdoms: the Rubenga chiefdom in the north and the Ntambuka chiefdom in the south, which is our study site. It should be noted that the Ntambuka chiefdom community alone comprises three groups: Pnene, Mugote and Nyakalengwa

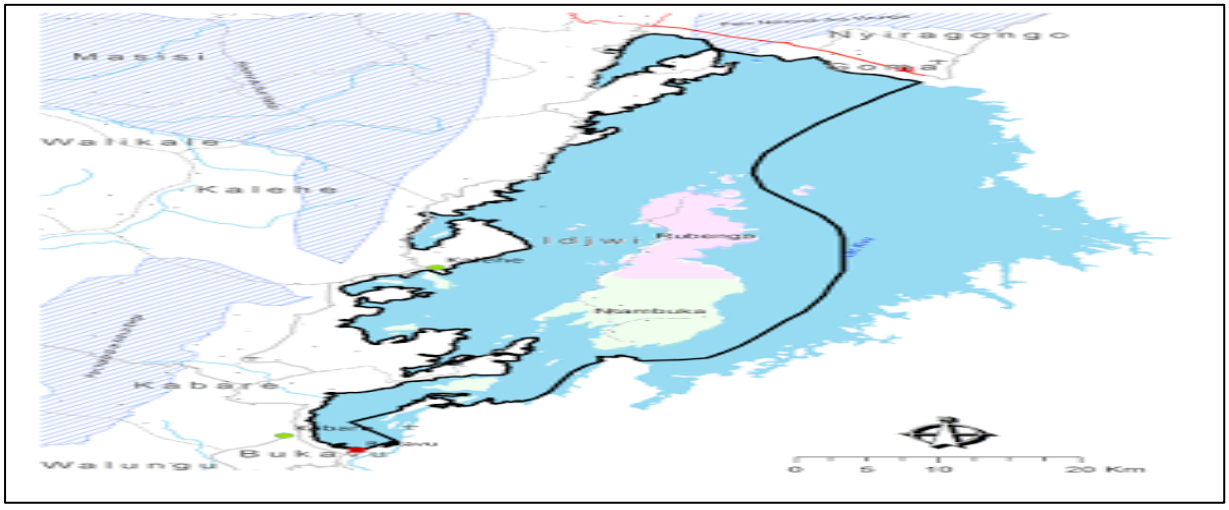

Figure 1: Idjwi map http://: www.workof.org

The Idjwi Island Ridge has an elongated shape in a meridian direction like Madagascar, slightly

Inclined to the east once superimposed (Kalegamire op. cit).

With an average altitude of 1,700m, Idjwi remains dominated by mountainous terrain in the Muganzo Mountains in the centre of the island, the highest peak with 2,300m altitude.

According to Kalegamire (op. cit), these are an urban landscape of hills with lines of tops either rounded or scaled in erosion benches or in flat-bottomed valleys (volcanic zone) or often hidden between relatively steep slopes convex and especially concave (metamorphic and granitic zone). These plains, hills and mountains are covered with metamorphic and granitic rocks on poor soil.

The territory of Idjwi experiences a mild and humid temperate climate with the intermittency of two seasons: the rainy season that lasts for about nine months (September to May) and the dry season which takes almost 4 months (from May to August). Average annual temperatures hover around 17oC during the coldest period in the rainy season and 30oC at the warmest time in the dry season (Gombaniro, 2016).

The island's river system is dense Kalegamire (op. cit). It is a low-slope network that is getting younger especially on the steep eastern and western coastal slopes. The main ridge from north to south remains the water tower and the dividing line of these waters, the most important of which are: Tama, Musheke, Kirheme, Cikoma, Mwiri, Kimalamungo, Kisheke, Bikangi, Kishenyi, Yoruhogoma, Bwina and Bukole.

Although the territory of Idjwi is an island, it nevertheless has its own low-flow streams ranging from 1 to 3 m3/S. These rivers, with a torrential behaviour for the most part, show flows that vary remarkably with the air of the watershed and especially with the seasons (Sévérine, 2016).

Figure II. : Lake part showing the entrance to South Idjwi Island: http://www.workof.org

Generally the soil of this region is volcanic and basaltic altered in red soil in the southwest part. These soils are thought to come from the larvae emitted by the old Kahuzi-Bièga volcanoes in the Tertiary.

This soil is clay and sandy, rich in silicate. The soil is less fertile because its structure suggests a large porosity that promotes a large drainage doubled by steep slopes. Today, we are witnessing a widespread depletion" of soils due to the absence of fallows and soil protection techniques. Everywhere the deforestation due to my conquest of maple lands, grazing areas, the practice of hills fire, the search for timber and heating promote different forms of erosion according to Habimana (2005) in Cironkamuha (2006).

The Basement Contains: Coltan, Cassiterite, Wolfram, Etc. Operated In an Artisanal Way

- **Generality Of Honey**

According to Nyakabwa (2005), plant morphology studies the typical external shapes and structures of plants as well as the transformations in which each of the parts can be studied, such as the influence of the environment or lifestyle.

According to Tharaud (1999), the development of this science is linked to that of systematics, which has led to a valuable and careful description of the different organs of plants, including roots, stems, leaves and flowers; and gave birth to a very rich and specialized botanical vocabulary.

Indeed, the classification of plants as a species, and their practical identification in the field, is based primarily on morphological criteria.

From the Latin Apis, bee, beekeeping is the human activity of raising bees. The Greeks attributed the inventory of beekeeping to Aristée, son of Apollo, and the Egyptians explained by a myth the birth of honey bees. The latter being the tears of the god Ra. The indisputable evidence of the oldest beekeeping techniques we possessed dates back to the 4th millennium BC, -3100 for Egypt, -2500 for the Indus Valley, -2200 for China. (http./en.ekopedia.org/Beeculture, 06 May 2008).

Bees are presented all over the world; from the tropics to the Arctic, from Amazonian forests to deserts. There are more than 20,000 species of bees on our

planet. Some bees are small, others larger and each adapts differently depending on the environment. The vast majority of these species have a solitary way of life, but some species live in colonies, such as honey bees and stingless bees. Honey bees collect large amounts of food and store them for difficult times, according to Van't Leven et al. (2005).

For several years, man has been harvesting stocks of honey or pollen and has made it a profession: beekeeping.

Like bees, beekeeping is found all over the world. However, the techniques they use vary by region. Honey bees provide us with honey, wax, pollen and propolis. They are also important pollinators for many of our crops.

All bee companies now inhabit the hives that beekeepers provide. It is in the image of his own dwellings that man now houses his bees. Like all insects, the bee is an animal with variable temperatures, which changes with the surrounding environment.

According to Anne and Six (1882), farmers and beekeepers are increasingly interested in renting hives during flowering time.

Honey made from a single plant species is called mono floral or plain floral. This category includes kapok, banana or coffee honey. When nectar is collected on several species of flowers, it is called honey all flowers or multi floral. Nectar contains a very small amount of pollen found in honey.

"Modern" honey contains only a crippled amount of pollen (Mutsaers et al.2005). Honey has a sweetening power greater than that of white sugar, i.e. it tastes the same sweet with a smaller amount of honey. Different honeys are obtained depending on the plants that the bees have foraged for: thyme fir honey, rapeseed, clover, honey all flowers, etc. (Pons 1958).

According to Raynal (1994), the morphological description of plants is only one aspect of their study. It leads to the basic definition of the plant, but it can be studied in many other respects (physiological, ecological, chemical, agronomic and artistic).

The description of a plant is first used to characterize it so that the species to which it belongs is distinguished from the others. It highlights all aspects accessible to observation. These aspects can then be compared to the homologous aspects of other species. To describe a plant is to list all the characteristics that are unique to it and that allow it to be identified within its biotope (Raynal op. cit).

- **Definition Of Characters And States Of Characters Used In The Work**

With regard to this work, several traits and their states have been listed, allowing a good morphological description of our species of the mellow plants studied.

Characters of Vegetative Organs
The stem

The stem is an organ trained in negative geotropism, that is, growing in the opposite direction of the earth's attraction. She wears bud leaves. In morphological terms, the stem is called "axis" (Nyakabwa op. cit).

Character States Based On the Morphological Type Observed In the Field

- Shrub: a small woody plant that branches close to the ground. Its height usually does not exceed 6 to 10m.
- Suffrutex: a bushy plant with a woody stem at its base but the upper part remains herbaceous and dies at the end of each growing period.
- Annual herbaceous plant: an unligned stem plant that germinates and grows in the same year.

CHARACTER STATES ACCORDING TO THE PORT

According to Amani (2001), the wearing of a plant stems from the general architecture that this plant takes. The arrangement of stems and twigs determines the wearing of the plant. Hence the following ports have been observed:

- Standing: stem upright from the base.
- Built: branches raised obliquely upwards.

The Leaf

The leaf is a lateral expansion of the stem or twigs. It is an almost green organ that admits a plane of symmetry. It has an intermediate petiole between limb and stem (Nyakabwa op.cit).

The petiole is a narrow cylindrical, semi cylindrical or gutter part that expands to its base in continuity with the stem and blooms at its top into a limb.

The limb is a green blade, traveled through ribs that form a continuous network whose pattern is characteristic of the species considered in which the sap circulates.

CHARACTER STATES BASED ON SHEET
States by Surface
The surface of any organ (stem, leaves, etc.) has various interesting characteristic features. So a stem or leaf can be:

- Hairless: devoid of undue ness, i.e. a set of hairs present on its surface.
- Smooth: covered with small rough asperities or touch.
- Punctuated: surface with tasks in the form of dots, wells, or depressions.
- Hairy: thick, thin, mars and quite long hair found on a surface.
- States based on coating

The Different Types Of Surface Coating According To Our Investigations Are:

- Scabrous: hairs often little, very short and thick, usually dilated.
- Pubescent: short, soft hair stooging and more or less erect and not hiding the support.

STATES BY THE SHAPES OF THE LIMB

General Shape Of The Limb

- Lanceolee: spearhead-shaped, several times longer than wide, the widest part being located downwards.
- Stringed: heart-shaped with a long petiole
- Oviform: having the same shape as roped with a large oval limb.
- Shape of the edge of the limb
- Whole: straight or curved edge, without cuttings or notches
- Crenelé: edges trimmed with broad, rounded or obtuse teeth
- Tooth: angular, sharp, straight, fairly deep and outward-facing indentations.

Shape of the Top of the Limb

- Acuminé: abruptly finished with a more or less long and fine tip, it can be widely, tightly or abruptly acuinnate.
- Cuspide: finished with a long tip, the sides of which are abruptly and distinctly concave.

Lobbed Shape of the Limb

- Palmatifide: webbed arrangement of the cutouts of the leaf limb.

Character States Based On Nervation

The nervation is the apparent arrangement of the ribs on the surface of the limb. It says:

- Pennée: when there is the presence of a main nervation in the axis of the petiole, and many lateral and secondary ribs attached to the primary rib all its height. Thus we recognize the penninerves nervations.
- 3 ribs at the base: nervation of the leaves with three lateral ribs at the base;
- **Palm:** when there are several main ribs arranged in a fan from the base of the limb

Character states based on phyllotaxia

Phyllotaxia is the study of all the very precise rules that govern the distribution of leaves on the stems.

We've got:

- The alternating leaves: which are homologous, inserted at the opposite level, alternating with one another;
- Opposite leaves: which are homologous, inserted at the same level, face to face.

Character States Based On Consistency

Limbs can be thin or thick, tender or hard. Consistency is also referred to as conventional terms. The terms used in this work are:

- Cactacea: thin cardboard consistency
- Coriace: skin consistency

REPRODUCTIVE ORGAN CHARACTERS

Inflorescence

This is the general arrangement of flowers on the stem or on the branch of a plant. The following types were found on the ground:

- Capitule: it is a simple monomodal inflorescence with short spines and sessile flowers with its shortened spine, at the same time, more or less widened often in the shape of a tray bearing bracts often arranged in volucre.
- A racy panic: it is a compound inflorescence where the cluster is composed of clusters. The various elements that formed the inflorescence are:
- Pedicelle: axis that carries a single flower.
- Bract: often reduced, green, coloured or scinous transformed leaf, located at the insertion of the pedicelle on the spine.
- Rachis; axis of the inflorescence that carries the flowers.

INFLORESCENCES OR FLOWERS ARE SAID:

- Lonely: when they are placed one part on the vegetative body of the plant;
- axillary: when solitary flowers are inserted into the underfield of a normal leaf.
- Apicales: when the flowers finish a twig that no longer extends into the suite.

The flower

The flower is a highly metamorphosed, limited-growth bud; it is an axis on which transformed leaves are inserted and sometimes eggs.

- Various methods of receptacle invagination

According to Raynal (op. cit); the receptacle is an extended top of a floral stalk on which are inserted the elements of a flower or the florets of a capitula.

WE DISTINGUISH THE FOLLOWING TYPES:

A) Plane or Slightly Bulging Receptacle

- Ovarian: the ovary is raised to or slightly above the other floral parts. In this case, the flower, is hypogyal (hypo - below because the perianth is inserted at the base of the ovary).

B) Dug or Invaginated Receptacles

- Ovarian infers: the receptacle is dug deep: it completely surrounds the ovary and is welded with it; the other floral pieces are inserted above the top of the ovary; the flower is epigyne (ear - above)

Insertion of Floral Pieces on The Receptacle

In the field, all the flowers observed were cyclical or vertical, i.e., the pieces were arranged in successive verticals very close together. Most of them were tetra cyclic and had four verticals of floral pieces, respectively.

Floral Symmetry

Some Flowers Of The Mellifer Plants Were Actinomorphs And Other Zygomorphs.

- The flower is actinomorphic or regular: when it has a radiar symmetry, consisting of passing several planes of symmetry.
- The flower is Zygomorphous or bilateral or irregular presents only one plane of symmetry as a result of the particular development of any of its pieces.

Pre-Flowering

Pre-flowering is the way the envelope parts of the same type are placed in relation to each other in relation to each other in the floral button. It is usually limited to the corolla.

Thus The Following Pre-Blooms Were Found On The Species We Described:

- Open volvlaflower pre-flowering: when the edges of the rooms are largely separated.
- Consolidated pre-flowering: the edge of the next room, conversely the button having the twisted appearance, all the pieces of the vertical have a covered edge and a covering edge.

Floral Wrap

All the flowers of the mellow plants harvested in the field were made up of two types of pieces:

1. The Chalice: Consists Of Generally Green Parts, The Sepals Whose Structure Is That Of The Leaf Limb. The Chalice Says:

- Dialysis: if the sepals are independent or free.
- Gam opal: if the sepals are welded by their base in a tube more or less elongated than the free lobes.

THE FATE OF THE CHALICE

Its Duration Varies From Which It Is Referred To As:

- Deciduon: when the sepals fall to the flower blooming.
- Marcescent: when, after fertilization, the sepals persist at the base of the fruit or on the fruit itself.

2. COROLLA: IS FORMED OF PETALS; IT IS ALSO LESS FIRM IN CONSISTENCY, MORE DELICATE THAN THE CHALICE. IT IS USUALLY COLORED.

The Corolla Is Said:

- Dialypetal: if the petals are independent and free
- Gamopetal: if the petals are welded together by their base.

Shape of the Corolla

Among The Actinomorphic Dialypetal Corollas Were The Following Forms:

- Rosacea: 5 petals spread in open rosette with very short or absent tab.
- On the other hand, for actinomorphic gamopetal corollas, we inventoried the following types:
- Rotacea: in a wheel, the tube dilated from the base, is narrowed at the top or it has less visible teeth.
- Infundibuliform: at first very tubuleous at the base, this corolla gradually widens into an unlobed funnel at the top.

Androme

Is the male part of the flower and is composed of all stamens a complete stamen has three: fillet, anther and connective. The location of the insertion of the net on the anther distinguishes the following anthers:

- basifixe anthers: the base of which is supported by the top of the net
- medifixe anthers: where the net is inclawed on the back of the anther
- Anthers adne: or the net is fixed along the entire length of the anther.

The stamens of one flower are either all similar (homomorphia) between them are dissimilar (heteromorphy), the stamens of one vertical different from those of another vertical, or the stamens of the same vertical different from each other.

In Addition, Compared To The Perianth, Stamens Can Be:

- Shorter, then they are called "included stamens";
- Larger, they are called "ex-serve edens."

Depending On The Number And Arrangement Of The Stamens In The Flower, We Distinguished:

- Androme polystemone: stamens in large numbers, usually more than 20 arranged on a generating spiral.
- Androme haplostémone: stamens in a single vertical.

The Stamens Can Also Be Joined Together:

- By their nets on the bottom or the entire length of these resulting in the formation of gamostemone androme, androme monadelphus or all the stamens are welded together.
- Through their anthers, they are attached to the sides to form a tube around the gynecology.

GYNECOLOGY

- It is the set of carpels of the same flower.
- The carpel: is a processed leaf for egg production.

It Includes:

- The ovary: a basilar part of the carpel or pistil, usually enlarged, containing one or more eggs inserted on the placenta;
- Style: the middle part of the carpel, often filiform, constituting a pathway from the pollen tube to the cavity of the ovary;
- Stigma: the terminal part of the carpel, acting as a pollen collector.

The Stigmas Show Different Forms:

- Stigmate ability: in the shape of small balls
- Bifid stigma: divided into 2 lobes;
- Stigmate trifide: divided into 3 lobes.

THE FRUIT

After fertilization, as the eggs become seeds, the ovary matures and matures to become a fruit.

The Following Fruit Types Were Observed In The Field:

Aène: it is a fleshy, syncarp fruit characterized by a sclerified endocarp surrounding the seed or seeds, only the mesocarp is luscious. The drupe contains a nucleus or several pyrenes.

Core: consisting of the sclerotic endocarp surrounding a single seed the seed is called almond in this case.

Bay: is a fleshy, syncarp fruit characterized by the usually thin exocarp and the fleshy mesocarp and endocarp. This means that the seeds are free in the "flesh" of the fruit. The berry is most often polysperm and therefore contains several seeds called seeds.

The podenide: it is a bay often large, sometimes more or less hardened pericarp, and parietal placentation, characteristic of the Caricaceae.

Biological Types and Types of Biotopes

- Biological types
- The classification of Raunkiaer (1934) adapted by Lebrun (1947) for tropical regions is often identified.
- We recognized the following types:
- Phanephytes (ph)

Are plants whose regeneration buds are located more than 25 to 50 cm above the soil surface and are carried by the caulinary apparatus. They are subdivided into:

- Microphanephytes: shrubs 8 to 2 m high.
- Nanophaneophytes: shrubs 2 - 0.5 m high.

Therophytes (T)

Annual plants that spend the wrong season in the form of seeds. Therophytes remain only in the state of seeds that are the only peri-growing bud of the plant. We only have one type here:

- Scapus therophytes (TSC): Grass with erect stems.

TYPES OF BIOTOPES

According to Raynal (op. cit) biotope is an environment subject to homogeneous ecological conditions: it is the physical support of a biocenosis.

The author goes on to say that the biotope highlights the appropriate environment in which the species achieves maximum vitality in relation to its authentic morphological, adaptation and multiplication.

We had cultivated plants and ruderal plants.

RESULTS

Detailed Description of Individuals Observed In the Field

Table 1. Description of *Burgmansia suaveolens* individuals (all measurements are given in cm)

Individus / Caractères	1	2	3	4	5	6	7	8	9	10
1. TIGE										
Surface	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre
Longueur	360	350	480	400	370	320	360	380	300	330
Circonférence (base)	34	27	23	37	24	36	32	37	34	29
Circonférence (1ère ramification)	23	15	12	21	13	17	20	13	10	13

Type morphologique	Arbuste	Arbuste	Arbuste	Arbuste	Arbuste	Arbuste	Arbuste	Arbuste	Arbuste	Arbuste
Port	Erigé	Erigé	Erigé	Erigé	Erigé	Erigé	Erigé	Erigé	Erigé	Erigé
Catégorie	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne
2. FEUILLE										
Surface	Lisse	Lisse	Lisse	Lisse	Lisse	Lisse	Lisse	Lisse	Lisse	Lisse
Revêtement	Scabreux	Scabreux	Scabreux	Scabreux	Scabreux	Scabreux	Scabreux	Scabreux	Scabreux	Scabreux
Longueur du pétiole	8 à 14	10 à 13	5 à 16	2 à 8	3,5 à 11	4 à 13	2 à 11	3 à 14	2 à 10,5	7 à 12
Longueur du limbe	11 à 22	14 à 51	8,5 à 19	15 à 29	15 à 37,5	13,5 à 30,5	11,5 à 33	19 à 43	15 à 42	14,5 à 30
Largeur du limbe	4 à 105	7 à 25	8 à 19	6,5 à 15	8 à 18	5 à 17,5	4,5 à 16	13 à 21	6,5 à 19	7,7 à 18
Symétrie du limbe	Symétrique	Symétrique	Symétrique	Symétrique	Symétrique	Symétrique	Symétrique	Symétrique	Symétrique	Symétrique
Forme générale	Lancéolée	Lancéolée	Lancéolée	Lancéolée	Lancéolée	Lancéolée	Lancéolée	Lancéolée	Lancéolée	Lancéolée
Forme du bord	Entier	Entier	Entier	Entier	Entier	Entier	Entier	Entier	Entier	Entier
Forme du sommet	Acuminé	Acuminé	Acuminé	Acuminé	Acuminé	Acuminé	Acuminé	Acuminé	Acuminé	Acuminé
Forme de la base	Oblique	Oblique	Oblique	Oblique	Oblique	Oblique	Oblique	Oblique	Oblique	Oblique
Nervation	Pennée	Pennée	Pennée	Pennée	Pennée	Pennée	Pennée	Pennée	Pennée	Pennée
Catégorie	Simples	Simples	Simples	Simples	Simples	Simples	Simples	Simples	Simples	Simples
Phyllotaxie	Alterne	Alterne	Alterne	Alterne	Alterne	Alterne	Alterne	Alterne	Alterne	Alterne
Consistance	Coriace	Coriace	Coriace	Coriace	Coriace	Coriace	Coriace	Coriace	Coriace	Coriace
3. FLEUR										
Situation	Solitaire	Solitaire	Solitaire	Solitaire	Solitaire	Solitaire	Solitaire	Solitaire	Solitaire	Solitaire
Réceptacle	Thalamiflore	Thalamiflore	Thalamiflore	Thalamiflore	Thalamiflore	Thalamiflore	Thalamiflore	Thalamiflore	Thalamiflore	Thalamiflore
Type de fleurs d'après le nombre des verticilles	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique
Position de pièces	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne
Symétrie	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe
Enveloppe florale	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe
Nature du calice	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale
Nombre de sépales	5	5	5	5	5	5	5	5	5	5
Couleur de sépales	Verte	Verte	Verte	Verte	Verte	Verte	Verte	Verte	Verte	Verte
Longueur de sépales	9	5,9	6,5	8	7,5	8	7	5,6	7,5	7
Nature de la corolle	Gamopétale	Gamopétale	Gamopétale	Gamopétale	Gamopétale	Gamopétale	Gamopétale	Gamopétale	Gamopétale	Gamopétale
Nombre de pétales	5	5	5	5	5	5	5	5	5	5
Couleur de pétales	Rose verdâtre	Rose verdâtre	Rose verdâtre	Rose verdâtre	Rose verdâtre	Rose verdâtre	Rose verdâtre	Rose verdâtre	Rose verdâtre	Rose verdâtre
Longueur de pétales	26	29	21	25	25	24	22	20	24,5	23
Forme de la corolle	infundibuliforme	Contortée	Contortée	Contortée	Contortée	Contortée	Contortée	Contortée	Contortée	ontortée
Nombre d'étamines	5	5	5	5	5	5	5	5	5	5
Type d'anthères selon l'insertion du filet	Basifixes	Basifixes	Basifixes	Basifixes	Basifixes	Basifixes	Basifixes	Basifixes	Basifixes	Basifixes
Etamines par rapport au périanthe	Incluses	Incluses	Incluses	Incluses	Incluses	Incluses	Incluses	Incluses	Incluses	Incluses
Position d'ovaire	Supère	Supère	Supère	Supère	Supère	Supère	Supère	Supère	Supère	Supère
Nature du stigmate	Capité	Capité	Capité	Capité	Capité	Capité	Capité	Capité	Capité	Capité

Position du réceptacle	Androgynophore	Andro gynophore	Andro gynophore	Andro gynophore	Andro gynophore	Andro gynophore	Andro gynophore	Andro gynophore	Andro gynophore	Andro gynophore
Nature des calicules	Soudés	Soudés	Soudés	Soudés	Soudés	Soudés	Soudés	Soudés	Soudés	Soudés
Couleur des calicules	Verte	Verte	Verte	Verte	Verte	Verte	Verte	Verte	Verte	Verte
Nature du gynécée	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe
Nature d'androcée	Isostémone	Isostémone	Isostémone	Isostémone	Isostémone	Isostémone	Isostémone	Isostémone	Isostémone	Isostémone
Concrescence d'étamines	Soudées	Soudées	Soudées	Soudées	Soudées	Soudées	Soudées	Soudées	Soudées	Soudées
Longueur d'étamines	8	8,1	8	8	8	8	8	8	8	8
Longueur du filet	5	5	5	5	5	5	5	5	5	5
Longueur anthères	3	3	3	3	3	3	3	3	3	3
Longueur du pédicelle	4	3,8	3	3,5	4	5	3,5	2,7	3,5	2,5
Longueur du style	18,5	16,9	17	18,5	21	18	16,5	17	18,4	18
Nombre de loges	2	2	2	2	2	2	2	2	2	2
Nombre d'ovules / loges	Plusieurs	Plusieurs	Plusieurs	Plusieurs	Plusieurs	Plusieurs	Plusieurs	Plusieurs	Plusieurs	Plusieurs

Table 2. Description of *Carica papaya* individuals

Individus / Caractères	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1. TIGE										
Surface	Ponctuée	Ponctuée	Ponctuée	Ponctuée	Ponctuée	Ponctuée	Ponctuée	Ponctuée	Ponctuée	Ponctuée
Longueur	630	700	800	650	500	600	400	480	590	470
Circonférence (base)	127,4	112,3	190	115	83	71	87	73	160	113
Circonférence (ramification)	104,1	94	162	97	86	56	74	44	147	80
Type morphologique	Arbuste	Arbuste	Arbuste	Arbuste	Arbuste	Arbuste	Arbuste	Arbuste	Arbuste	Arbuste
Port	Erigé	Erigé	Erigé	Erigé	Erigé	Erigé	Erigé	Erigé	Erigé	Erigé
Catégorie	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne
2. FEUILLE										
Surface	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre
Revêtement	Scabreux	Scabreux	Scabreux	Scabreux	Scabreux	Scabreux	Scabreux	Scabreux	Scabreux	Scabreux
Longueur du pétales	36,6 à 62,7	25,5 à 58	28 à 114	40 à 102	27 à 76	28 à 114	31,6 à 42	32 à 43	17 à 81	41 à 32
Longueur du limbe	52,5 à 58,8	35 à 41	29 à 61	29 à 41	21 à 36	29 à 61	20 à 38	12 à 28	24 à 47	24 à 32
Largueur du limbe	60 à 61	42 à 49	38 à 92	44,5 à 76	30 à 61	38 à 92	30 à 60,9	19 à 43,3	40 à 69	38 à 58
Symétrie du limbe	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique
Forme générale	Aristulée	Aristulée	Aristulée	Aristulée	Aristulée	Aristulée	Aristulée	Aristulée	Aristulée	Aristulée
Forme du bord	Entier	Entier	Entier	Entier	Entier	Entier	Entier	Entier	Entier	Entier
Forme du sommet	Pointue	Pointue	Pointue	Pointue	Pointue	Pointue	Pointue	Pointue	Pointue	Pointue
Forme de la base	Palmatifide	Palmatifide	Palmatifide	Palmatifide	Palmatifide	Palmatifide	Palmatifide	Palmatifide	Palmatifide	Palmatifide
Nervation	Palmée	Palmée	Palmée	Palmée	Palmée	Palmée	Palmée	Palmée	Palmée	Palmée
Catégorie	Simples palmatilobées	Simples palmatilobées	Simples palmatilobées	Simples palmatilobées	Simples palmatilobées	Simples palmatilobées	Simples palmatilobées	Simples palmatilobées	Simples palmatilobées	Simples palmatilobées
Phyllotaxie	Opposées	Opposées	Opposées	Opposées	Opposées	Opposées	Opposées	Opposées	Opposées	Opposées
Consistance	Cartacée	Cartacée	Cartacée	Cartacée	Cartacée	Cartacée	Cartacée	Cartacée	Cartacée	Cartacée
3. FLEUR										
Situation	Axillaire	Axillaire	Axillaire	Axillaire	Axillaire	Axillaire	Apicale	Apicale	Axillaire	Auxiliaire
Réceptacle	Thalamifl	Thalamifl	Thalamifl	Thalamifl	Thalamifl	Thalamifl	Thalamifl	Thalamifl	Thalamifl	Thalamifl

	ore	ore	ore	ore	ore	ore	ore	ore	ore	ore
Type de fleurs d'après le nombre des verticilles	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique
Position de pièces	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne
Symétrie	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe
Enveloppe florale	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe
Nature du calice	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale
Sort du calice	Caduc	Caduc	Caduc	Caduc	Caduc	Caduc	Caduc	Caduc	Caduc	Caduc
Nombre de sépales	5	5	5	5	5	5	5	5	5	5
Longueur de sépales	0,5	0,7	0,4	0,3	0,5	0,8	0,7	0,9	0,5	0,3
Couleur de pétales	Jaune doré	Jaune doré	Jaune doré	Jaune doré	Jaune doré	Jaune doré	Jaune doré	Jaune doré	Jaune doré	Jaune doré
Longueur de pétales	6,5	6,3	6,4	6,7	6	6,5	7	6,5	6,2	6,5
Forme de la corolle	Rotacée	Rotacée	Rotacée	Rotacée	Rotacée	Rotacée	Rotacée	Rotacée	Rotacée	Rotacée
Nombre d'étamines	5	5	5	5	5	5	5	5	5	5
Nature d'androcée	Isostemone	Isostemone	Isostemone	Isostemone	Isostemone	Isostemone	Isostemone	Isostemone	Isostemone	Isostemone
Concrescence d'étamines	Soudés	Soudés	Soudés	Soudés	Soudés	Soudés	Soudés	Soudés	Soudés	Soudés
Position d'ovaire	Supère	Supère	Supère	Supère	Supère	Supère	Supère	Supère	Supère	Supère
Nombre de carpelles	5	5	5	5	5	5	5	5	5	5
Type d'anthères d'après le nombre des verticilles	Basifixe	Basifixes	Basifixes	Basifixes	Basifixes	Basifixes	Basifixes	Basifixes	Basifixes	Basifixes
Préfloraison	Contortée	Contortée	Contortée	Contortée	Contortée	Contortée	Contortée	Contortée	Contortée	Contortée
Nature du gynécée	Coenocarpe	Coenocarpe	Coenocarpe	Coenocarpe	Coenocarpe	Coenocarpe	Coenocarpe	Coenocarpe	Coenocarpe	Coenocarpe
Etamines par rapport au périanthe	Incluses	Incluses	Incluses	Incluses	Incluses	Incluses	Incluses	Incluses	Incluses	Incluses
Longueur d'étamines	8	8,1	8	8	8	8	8	8	8	8
Longueur du filet	5	5	5	5	5	5	5	5	5	5
Nombre de loges	1	1	1	1	1	1	1	1	1	1
Nombre d'ovules / loges	Plusieurs	Plusieurs	Plusieurs	Plusieurs	Plusieurs	Plusieurs	Plusieurs	Plusieurs	Plusieurs	Plusieurs
Gynécée	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe
5. FRUIT										
Type du fruit	Baie	Baie	Baie	Baie	Baie	Baie	Baie	Baie	Baie	Baie
Nature du fruit	Péponide	Péponide	Péponide	Péponide	Péponide	Péponide	Péponide	Péponide	Péponide	Péponide
Longueur du fruit	15	15	15	15	15	15	15	15	15	15

Table 3. Description of *Helianthus annuus* individuals

Individus / Caractères	1	2	3	4	5	6	7	8	9	10
1. TIGE										
Surface	Poilue	Poilue	Poilue	Poilue	Poilue	Poilue	Poilue	Poilue	Poilue	Poilue
Longueur	230	240	205	270	220	250	270	270	200	280
Circonférence (base)	10	11	11	8	11	18	14	16	10	16
Circonférence (ramification)	7	14	8	7	9	16	10	11	8	12
Type morphologique	Herbe annuelle	Herbe annuelle	Herbe annuelle	Herbe annuelle	Herbe annuelle	Herbe annuelle	Herbe annuelle	Herbe annuelle	Herbe annuelle	Herbe annuelle
Port	Dressé	Dressé	Dressé	Dressé	Dressé	Dressé	Dressé	Dressé	Dressé	Dressé
Catégorie	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne
2. FEUILLE										
Surface	Poilue	Poilue	Poilue	Poilue	Poilue	Poilue	Poilue	Poilue	Poilue	Poilue
Revêtement	Pubescent	Pubescent	Pubescent	Pubescent	Pubescent	Pubescent	Pubescent	Pubescent	Pubescent	Pubescent
Longueur du pétales	3 à 16,4	2 à 14,5	4,5 à 28	1,8 à 13	2 à 19	5 à 28	2 à 17,5	2,5 à 22	3,1 à 17	3,5 à 22
Longueur du limbe	9,7 à 24	6 à 26	15,6 à 34	10 à 35	10 à 29,5	10 à 37	8 à 36	14 à 27,2	7 à 27,2	17 à 30
Largueur du limbe	4 à 19,5	4,2 à 19	77 à 37	4 à 25	32,8 à 26,5	7 à 39	6 à 28,4	5à 24,2	5,3 à 20,5	7,4 à 28,8
Symétrie du limbe	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique
Forme générale	Cordé	Cordé	Cordé	Cordé	Cordé	Cordé	Cordé	Cordé	Cordé	Cordé
Forme du bord	Denté	Denté	Denté	Denté	Denté	Denté	Denté	Denté	Denté	Denté
Forme du sommet	Acuminé	Acuminé	Acuminé	Acuminé	Acuminé	Acuminé	Acuminé	Acuminé	Acuminé	Acuminé
Forme de la base	Auriculée	Auriculée	Auriculée	Auriculée	Auriculée	Auriculée	Auriculée	Auriculée	Auriculée	Auriculée
Nervation	Pennée 3 nervées a la base	Pennée 3 nervées a la base	Pennée 3 nervées a la base	Pennée 3 nervées a la base	Pennée 3 nervées a la base	Pennée 3 nervées a la base	Pennée 3 nervées a la base	Pennée 3 nervées a la base	Pennée 3 nervées a la base	Pennée 3 nervées a la base
Catégorie	Simples	Simples	Simples	Simples	Simples	Simples	Simples	Simples	Simples	Simples
Phyllotaxie	Alternes	Alternes	Alternes	Alternes	Alternes	Alternes	Alternes	Alternes	Alternes	Alternes
Consistance	Corvace	Corvace	Corvace	Corvace	Corvace	Corvace	Corvace	Corvace	Corvace	Corvace
3, INFLORESCENCE										
Situation	Solitaire	Solitaire	Solitaire	Solitaire	Solitaire	Solitaire	Solitaire	Solitaire	Solitaire	Solitaire
Type	Capitule	Capitule	Capitule	Capitule	Capitule	Capitule	Capitule	Capitule	Capitule	Capitule
Organes appendiculaires	2 bractées	2 bractées	2 bractées	2 bractées	2 bractées	2 bractées	2 bractées	2 bractées	2 bractées	2 bractées
Dimension des organes	3	2,5	3	2,7	2,9	3,2	3,5	3,4	2,8	3
Nombre des ligules	24	24	24	24	24	24	24	24	24	24
Couleur des ligules	Jaune	Jaune	Jaune	Jaune	Jaune	Jaune	Jaune	Jaune	Jaune	Jaune
Longueur des ligules	6,5	5,5	6	6,5	6,6	5,5	5,6	6,3	5,5	6,5
Nombre des papilles	Plusieurs	Plusieurs	Plusieurs	Plusieurs	Plusieurs	Plusieurs	Plusieurs	Plusieurs	Plusieurs	Plusieurs
4. FLEUR										
Situation	Axillaire	Axillaire	Axillaire	Axillaire	Axillaire	Axillaire	Apicale	Apicale	Axillaire	Auxiliaire
Réceptacle	Caliciflore	Caliciflore	Caliciflore	Caliciflore	Caliciflore	Caliciflore	Caliciflore	Caliciflore	Caliciflore	Caliciflore
Type de fleurs d'après le nombre des verticilles	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique

Position de pièces	Epigyne	Epigyne	Epigyne	Epigyne	Epigyne	Epigyne	Epigyne	Epigyne	Epigyne	Epigyne
Symétrie	Zygomorphe	Zygomorphe	Zygomorphe	Zygomorphe	Zygomorphe	Zygomorphe	Zygomorphe	Zygomorphe	Zygomorphe	Zygomorphe
Enveloppe florale	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe
Nature du calice	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale
Sort du calice	Caduc	Caduc	Caduc	Caduc	Caduc	Caduc	Caduc	Caduc	Caduc	Caduc
Nombre de sépales	14	14	14	14	14	14	14	14	14	14
Couleur des sépales	Verte	Verte	Verte	Verte	Verte	Verte	Verte	Verte	Verte	Verte
Longueur de sépales	3	3,4	3	3,5	3,6	3,7	3,5	3	3,6	3
Couleur de pétales	Jaune doré	Jaune doré	Jaune doré	Jaune doré	Jaune doré	Jaune doré	Jaune doré	Jaune doré	Jaune doré	Jaune doré
Nombre de pétales	6	6	5	6	6	5	5	5	5	5
Longueur des pétales	6,5	6,3	6,4	6,7	6	6,5	7	6,5	6,2	6,5
Nombre d'étamines	6	6	6	6	6	6	6	6	6	6
Concrescence d'étamines	Synanthérées	Synanthérées	Synanthérées	Synanthérées	Synanthérées	Synanthérées	Synanthérées	Synanthérées	Synanthérées	Synanthérées
Position d'ovaire	Infère	Infère	Infère	Infère	Infère	Infère	Infère	Infère	Infère	Infère
Nombre de carpelles	3	2	2	2	2	2	2	2	2	2
Type d'anthères d'après le nombre des verticilles	Adnées	Adnées	Adnées	Adnées	Adnées	Adnées	Adnées	Adnées	Adnées	Adnées
Nature du gynécée	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe
Etamines par rapport au périanthe	Exsertes	Exsertes	Exsertes	Exsertes	Exsertes	Exsertes	Exsertes	Exsertes	Exsertes	Exsertes
Forme du stigmate	Trifide	Trifide	Trifide	Trifide	Trifide	Trifide	Trifide	Trifide	Trifide	Trifide
Nombre de loges	1	1	1	1	1	1	1	1	1	1
Nombre d'ovules / loges	1	1	1	1	1	1	1	1	1	1
Gynécée	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe
5. FRUIT										
Type du fruit	Akène	Akène	Akène	Akène	Akène	Akène	Akène	Akène	Akène	Akène
Longueur du fruit	3	3	3	3	3	3	3	3	3	3

Table 4. Description of *Malvaviscus arboreus* individuals

Individus / Caractères	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1. TIGE										
Surface	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre
Longueur	9	9	8	10	16	26	17	20	25	23
Circonférence (base)	6	4	8	12	9	11	10	10,4	10,2	9,8
Type morphologique	Suffrutex	Suffrutex	Suffrutex	Suffrutex	Suffrutex	Suffrutex	Suffrutex	Suffrutex	Suffrutex	Suffrutex
Port	Erigé	Erigé	Erigé	Erigé	Erigé	Erigé	Erigé	Erigé	Erigé	Erigé
Catégorie	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne
2. FEUILLE										

Surface	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre
Longueur du pétiole	1 à 7	1à 7	0,9 à 6,8	0,8 à 6	1,2 à 10	0,9 à 8	0,5 à 11,2	1 à 8	0,8 à 5	1 à 8,4
Longueur du limbe	6, 8 à 13, 8	6, 6, à 14	5,7 à 13,5	5,7 à 12,4	5,5 à 18	5,4 à 15,7	4,3 à 14,5	4,8 à 15	6,5 à 13,5	4,3 à 14,2
Largueur du limbe	4 à 8,9	4,1 à 9	3,6 à 8	2,5 à 8	3,8 à 12,5	2 à 13	1,9 à 11	2,3 à 9,3	3 à 11	2,5 à 9,1
Symétrie du limbe	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique
Forme générale	Oviforme	Oviforme	Oviforme	Oviforme	Oviforme	Oviforme	Oviforme	Oviforme	Oviforme	Oviforme
Forme du bord	Crénelé	Crénelé	Crénelé	Crénelé	Crénelé	Crénelé	Crénelé	Crénelé	Crénelé	Crénelé
Forme du sommet	Cuspide	Cuspide	Cuspide	Cuspide	Cuspide	Cuspide	Cuspide	Cuspide	Cuspide	Cuspide
Forme de la base	Equilatérale	Equilatérale	Equilatérale	Equilatérale	Equilatérale	Equilatérale	Equilatérale	Equilatérale	Equilatérale	Equilatérale
Nervation	Pennée 3 - nervée base	Pennée 3 - nervée base	Pennée 3 - nervée base	Pennée 3 - nervée base	Pennée 3 - nervée base	Pennée 3 - nervée base	Pennée 3 - nervée base	Pennée 3 - nervée base	Pennée 3 - nervée base	Pennée 3 - nervée base
Catégorie	Simples	Simples	Simples	Simples	Simples	Simples	Simples	Simples	Simples	Simples
Phyllotaxie	Alterne	Alterne	Alterne	Alterne	Alterne	Alterne	Alterne	Alterne	Alterne	Alterne
Consistance	Coriacé	Coriacé	Coriacé	Coriacé	Coriacé	Coriacé	Coriacé	Coriacé	Coriacé	Coriacé
3. FLEUR										
Situation	Solitaire	Solitaire	Solitaire	Solitaire	Solitaire	Solitaire	Solitaire	Solitaire	Solitaire	Solitaire
Réceptacle	Thalamiflore	Thalamiflore	Thalamiflore	Thalamiflore	Thalamiflore	Thalamiflore	Thalamiflore	Thalamiflore	Thalamiflore	Thalamiflore
Type de fleurs d'après le nombre des verticiles	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique
Position de pièces	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne
Symétrie	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe
Enveloppe florale	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe
Nature du calice	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale	Gamosépale
Nombre de sépales	5	5	5	5	5	5	5	5	5	5
Couleur de sépales	Verte	Verte	Verte	Verte	Verte	Verte	Verte	Verte	Verte	Verte
Longueur de sépales	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5
Nature de la corolle	Dialypétale	Dialypétale	Dialypétale	Dialypétale	Dialypétale	Dialypétale	Dialypétale	Dialypétale	Dialypétale	Dialypétale
Nombre de pétales	5	5	5	5	5	5	5	5	5	5
Couleur de pétales	Rouge	Rouge	Rouge	Rouge	Rouge	Rouge	Rouge	Rouge	Rouge	Rouge
Longueur de pétales	4,2	6,5	7	6,5	6,5	6	6	6,5	5,5	6
Préfloraison	Contortée	Contortée	Contortée	Contortée	Contortée	Contortée	Contortée	Contortée	Contortée	Contortée
Nectaires	Présents	Présents	Présents	Présents	Présents	Présents	Présents	Présents	Présents	Présents
Nombre d'étamines	24	24	24	24	24	24	24	24	24	24
Type d'anthères selon l'insertion du filet	Médifixes	Médifixes	Médifixes	Médifixes	Médifixes	Médifixes	Médifixes	Médifixes	Médifixes	Médifixes
Etamines par rapport au	Exsertes	Exsertes	Exsertes	Exsertes	Exsertes	Exsertes	Exsertes	Exsertes	Exsertes	Exsertes

périanthe										
Position d'ovaire	Supère	Supère	Supère	Supère	Supère	Supère	Supère	Supère	Supère	Supère
Nombre de carpelles	10	10	10	10	10	10	10	10	10	10
Longueur du filet	7	7	8	7,5	7,5	7,5	7	7,5	8	7
Longueur du pédicelle	4,5	3,4	4	2	3	3	3	2,5	6	3,5
Nature du stigmate	Capité	Capité	Capité	Capité	Capité	Capité	Capité	Capité	Capité	Capité
Position du réceptacle	Androgynophore	Androgynophore	Androgynophore	Androgynophore	Androgynophore	Androgynophore	Androgynophore	Androgynophore	Androgynophore	Androgynophore
Nombre de calicules	7	7	7	7	7	7	7	7	7	7
Longueur des calicules	1,8	1,2	1,6	1,7	1,8	1,6	1,5	1,6	1,7	1,8
Nature des calicules	Soudés	Soudés	Soudés	Soudés	Soudés	Soudés	Soudés	Soudés	Soudés	Soudés
Couleur des calicules	Verte	Verte	Verte	Verte	Verte	Verte	Verte	Verte	Verte	Verte
Nature du gynécée	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe
Nature d'androcée	Polystémone	Polystémone	Polystémone	Polystémone	Polystémone	Polystémone	Polystémone	Polystémone	Polystémone	Polystémone
Concrescence d'étamines	Polyandre	Polyandre	Polyandre	Polyandre	Polyandre	Polyandre	Polyandre	Polyandre	Polyandre	Polyandre
Forme de stigmate	Capité	Capité	Capité	Capité	Capité	Capité	Capité	Capité	Capité	Capité
Longueur du stigmate	0,7	0,7	0,8	0,7	0,6	0,8	0,9	0,7	0,7	0,9
Longueur du style	8	8	8	8	8	8	8	8	8	8
Nombre de loges	5	5	5	5	5	5	5	5	5	5
Nombre d'ovules / loges	1	1	1	1	1	1	1	1	1	1

Table 5. Description of *Mangifera indica* individuals

Individus / Caractères	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1. TIGE										
Surface	Ponctuée	Ponctuée	Ponctuée	Ponctuée	Ponctuée	Ponctuée	Ponctuée	Ponctuée	Ponctuée	Ponctuée
Longueur	630	700	800	650	500	600	400	480	590	470
Circonférence (base)	127,4	112,3	190	115	83	71	87	73	160	113
Circonférence (ramification)	104,1	94	162	97	86	56	74	44	147	80
Type morphologique	Arbuste	Arbuste	Arbuste	Arbuste	Arbuste	Arbuste	Arbuste	Arbuste	Arbuste	Arbuste
Port	Erigé	Erigé	Erigé	Erigé	Erigé	Erigé	Erigé	Erigé	Erigé	Erigé
Catégorie	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne	Aérienne
2. FEUILLE										
Surface	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre	Glabre
Longueur du pétales	2,5 à 4	0,9 à 3,6	2,2 à 5	1 à 6	4 à 5,5	1,8 à 5	1 à 45	2 à 9,6	1,1 à 5	1 à 5,2
Longueur du limbe	17,9 à 33	11,5 à 22,5	10 à 40	13 à 29	10 à 40	13 à 29	12 à 29,8	10,2 à 40	15 à 35	7,2 à 22
Largueur du limbe	4,9 à 11,3	2,5 à 5,8	2,7 à 12,2	4 à 9	2,7 à 12,2	4 à 9	23 à 6	3,3 à 9,2	2,8 à 6	2 à 7

Symétrie du limbe	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique	Asymétrique
Forme générale	Lancéolée	Lancéolée	Lancéolée	Lancéolée	Lancéolée	Lancéolée	Lancéolée	Lancéolée	Lancéolée	Lancéolée
Forme du bord	Entier	Entier	Entier	Entier	Entier	Entier	Entier	Entier	Entier	Entier
Forme du sommet	Acuminé	Acuminé	Acuminé	Acuminé	Acuminé	Acuminé	Acuminé	Acuminé	Acuminé	Acuminé
Forme de la base	Cunéiforme	Cunéiforme	Cunéiforme	Cunéiforme	Cunéiforme	Cunéiforme	Cunéiforme	Cunéiforme	Cunéiforme	Cunéiforme
Nervation	Pennée	Pennée	Pennée	Pennée	Pennée	Pennée	Pennée	Pennée	Pennée	Pennée
Catégorie	Simples	Simples	Simples	Simples	Simples	Simples	Simples	Simples	Simples	Simples
Phyllotaxie	Alternes	Alternes	Alternes	Alternes	Alternes	Alternes	Alternes	Alternes	Alternes	Alternes
Consistance	Coriaces	Coriaces	Coriaces	Coriaces	Coriaces	Coriaces	Coriaces	Coriaces	Coriaces	Coriaces
3. INFLORESCENCE										
Type d'inflorescence	Panicule racémeuse	Panicule racémeuse	Panicule racémeuse	Panicule racémeuse	Panicule racémeuse	Panicule racémeuse	Panicule racémeuse	Panicule racémeuse	Panicule racémeuse	Panicule racémeuse
Longueur du pédoncule	15	15	15	15	15	15	15	15	15	15
4. FLEUR										
Situation	Apicale	Apicale	Apicale	Apicale	Apicale	Apicale	Apicale	Apicale	Apicale	Apicale
Réceptacle	Thalamiflore	Thalamiflore	Thalamiflore	Thalamiflore	Thalamiflore	Thalamiflore	Thalamiflore	Thalamiflore	Thalamiflore	Thalamiflore
Type de fleurs d'après le nombre des verticilles	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique	Tetracyclique
Position de pièces	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne	Hypogyne
Symétrie	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe	Actinomorphe
Enveloppe florale	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe	Périanthe
Nature du calice	Dialysépale	Dialysépale	Dialysépale	Dialysépale	Dialysépale	Dialysépale	Dialysépale	Dialysépale	Dialysépale	Dialysépale
Sort du calice	Caduc	Caduc	Caduc	Caduc	Caduc	Caduc	Caduc	Caduc	Caduc	Caduc
Nombre de sépales	5	5	5	5	5	5	5	5	5	5
Couleur de pétales	Blanche tachetée de jaune	Blanche tachetée de jaune	Blanche tachetée de jaune	Blanche tachetée de jaune	Blanche tachetée de jaune	Blanche tachetée de jaune	Blanche tachetée de jaune	Blanche tachetée de jaune	Blanche tachetée de jaune	Blanche tachetée de jaune
Longueur de pétales	3	2,5	2,6	3,5	3,6	2,9	3	3,4	2,8	2,3
Forme de la corolle	Rotacée	Rotacée	Rotacée	Rotacée	Rotacée	Rotacée	Rotacée	Rotacée	Rotacée	Rotacée
Préfloraison	Valvaire ouverte	Valvaire ouverte	Valvaire ouverte	Valvaire ouverte	Valvaire ouverte	Valvaire ouverte	Valvaire ouverte	Valvaire ouverte	Valvaire ouverte	Valvaire ouverte
Nombre d'étamines	5	5	5	5	5	5	5	5	5	5
Nature d'androcée	Monadelphe	Monadelphe	Monadelphe	Monadelphe	Monadelphe	Monadelphe	Monadelphe	Monadelphe	Monadelphe	Monadelphe
Concrescence d'étamines	Soudés	Soudés	Soudés	Soudés	Soudés	Soudés	Soudés	Soudés	Soudés	Soudés
Position d'ovaire	Supère	Supère	Supère	Supère	Supère	Supère	Supère	Supère	Supère	Supère
Type d'anthères d'après le nombre des verticilles	Médifxes	Médifxes	Médifxes	Médifxes	Médifxes	Médifxes	Médifxes	Médifxes	Médifxes	Médifxes
Nombre de loges	1	1	1	1	1	1	1	1	1	1

Nombre d'ovules / loges	1	1	1	1	1	1	1	1	1	1
Gynécée	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe	Syncarpe
5. FRUIT										
Type du fruit	Drupe	Drupe	Drupe	Drupe	Drupe	Drupe	Drupe	Drupe	Drupe	Drupe
Longueur du fruit	12	12	12	12	12	12	12	12	12	12

Table 6 shows that all species studied belong to the Magnoliophyta branch, the Rosophytina sub branch.

Branch	S/Branch	Class	Sub-class : Groups	Orders	Families	Species
Magnoliophyta	Rosophytina	Rosopsida	Rosidae Eurosidae II	Brassicales Malvales Sapindales	Caricaceae Malvaceae Anacardiaceae	*Carica papaya* *Malvaviscus arboreus* *Mangifera indica*
		Asteropsida	Atseridae : Euasteridae I Euasteridae II	Solanales Asterales	Solanaceae Asteraceae	*Brugmasia suaveolens* *Helianthus annuus*

They are divided into two classes (Rosopsida and Asteropsida), into two subclasses (Rosidae (Subgroup Eurosidae II) and Asteridae (two subgroups: Euasteridae I and Euasteridae II), five orders (Brassicales, Malvales, Sapindales, Solanales and Asterales), five families (Caricaceae, Malvaceae, Anacardiaceae, Solanaceae and Asteraceae) and five species (*Carica papaya*, *Malvaviscus arboreus*, *Magnifera indica*, *Brugmansia suaveolens* and *Helianthus annuus*).

Morphological Description of Individuals Observed In the Field

The detailed description of the individuals observed in the field can be found in the various tables in the appendix of this work. For each species, we observed 10 different individuals located in different biotopes to detect changes and changes that may be due to different biotopes.

Brief Description of the Five Mellow Plants Studied

Burgmansia suaveolens Syn: *Datura suaveolens* (THUMB and BONPL ex WILLD) BERCHT and PRESIL.

A shrub ranging in size from 300 to 480cm. The stem is airy and hairless. Its circumference up to 10 cm. Its port is erected.

The leaves are alternating, simple, symmetrical and ex-stipulated with a scabrous coating and sometimes we observe very small polishes. The petiole has a length ranging from 2 to 16m. The limb has a length between 11 and 51 cm and its width varies between 4 and 25cm. It is launched, oblique at the base, at the entire edge and the top is acumine. Its nervation is pennate and to a tough consistency.

Burgmansia Suaveolens **Is A Monocline Plant With Bisexual Flowers.**

The flowers are actinomorphic, solitary (a pedicelle between 2.7 and 5cm in length), tetracyclic, hypogynous and equipped with a thalamith receptor characterized by a synsepal chalice consisting of 5 green sepals whose length between 5.9 and 9cm.

The infundibuliform corolla is made up of 5 welded greenish-pink petals with a size ranging from 20 to 29cm.

The Gyneca is a long-style syncarpic that ranges from 17 to 21cm and has a upper ovary, each with several eggs.

For All The Samples Observed, We Did Not Encounter The Fruit.

Floral Formula:

$$* ⚥ K\ (5)\ C\ (5)\ A\tilde{5}\underline{G}^{2}_{\infty}$$

Carica Papaya

Shrub, 460 to 700 cm long. The stem is airy and punctuated. The circumference of the stem is 51 to 86cm at the base and decreases at the branching where it goes up to 387.2cm.

The leaves are opposite, simple palmatilobés and without stipulats with a large green petiole whose size ranges from 25.5 to 97cm. The limb is systematic and hairless.

Its length ranges from 19 to 92 cm; it has a whole edge, an arist top and its lobed shape is palmatifide, with unisex dioecious webbed nervation;

Flowers are actinomorphs, axillars, tetracyclics, and hypogyns. Their receptacle is thalamiflore, with a perianth consisting of a green cadupal caly, consisting of 5 sepals whose length varies between 0.3 and 0.9cm.

The corolla is symepetal, with a consolidated pre-flowering with 5 golden yellow petals with a size of 6.2 to 7cm.

5-carpel monocarpal gynecen with 5 carpels forming a upper and unicular ovary containing several eggs with the presence of 5 partitions that are not open. Styles are free and the stigmas are surrendered.

The fruit is called the berry of the peponide category and can reach a length of up to 15cm and have white latex at its base.

Floral Formula:

$$*oq\ \mathrm{K}(5)\mathrm{C}(5)\mathrm{A}0\underline{G}(5)^{1}_{\infty}$$

Helianthus Annuus

Annual herbaceous plant raised 200 to 280cm long stem. It has white hairs that are resistant to friction. Its circumference varies between 8cm and 18cm at the base and decreases to 7cm at its branching.

The leaves are alternating, simple ex-stipulated with a pubescent coating with white hair stun not resistant to friction. They have a petiole ranging in length from 1.8 to 28cm, and have an asymmetrical limb ranging in length from 6 to 36cm and width shall be between 4 and 37cm wide. Equipped with the hairs on these faces, the limb is green, cordé or cordiform, toothed at the base edge and acumine top. The nervation is pennate at the base with 3 lateral ribs connected to each other before reaching the edge of the limb and the consistency is tough.

The inflorescences are solitary, in capitules, containing two green bracts with a size of 3.5cm and which includes flowers of two kinds, namely, the tubulated flowers which are numerous fertile and central as well as the lined flowers that are 24 in colour, yellow, reaching a length of 5.5cm. The growth of the inflorescence is centripetal (i.e. starts at the periphery and progresses to the center), with many white Pappus located in continuous line below the corolla. In the centre, there are flower buds that make up the growth of the inflorescence.

Helianthus Annuus Is A Monocline Plant With Bisexual Flowers.

The flowers are zygomorphic, tetracyclic, epigyne and pentamers with a caliciflora receptacle.

The perianth consists of a gamomust calacica chalice consisting of 14 green sepals, 2.5 to 3 cm long, which is lined with the same green calicules of 21. The corolla consists of 5 to 6 yellow welded petals with bulges at its base.

Androme is monadelphus with 6 stamens sysanized and exserted.

The anthers are inserted along the entire length of the net (adne anthers).

Gyneca is syncarpic, bi tricarpillar formed of an inference and unilocular with only one egg per box. The ovary is topped by a long style with a bifid and sometimes trifid stigma at the top.

THE FRUIT IS AN OVOID AKEN WITH A LENGTH OF 3CM.

Floral Formula:

$$\%\,\bar{q}\mathrm{K}x\ \mathrm{C}\ (5-6)\ \mathrm{A}5\bar{G}\ (2-3)^{1}_{1}$$

Malvaviscus Arboreus

It is a suffrutescent plant, 8 to 26cm long. The stem is airy and hairless, full, with a circumference of between 4 and 12cm at the base. Its port is erected and lacks the ramifications.

The leaves are alternate, simple and exstipated with petioles measuring 6 to 11.2cm. The limb is asymmetrical in general and measures 4.3 and 18cm in length and 2cm and 13cm of drop. The general shape of the limb is oviform, with a crenellated edge. Its base is equilateral and the top is cuspid. The nervation is pennate, at the base 3 lateral ribs connected to each other before reaching the edge of the limb. The consistency of the limb is tough.

It's A Monocline Plant With Bisexual Flowers.

The flowers are actinomorphic, solitary, tetracylic, hypogynistic and pentamer with a thalamiflora and androgynophore receptacle. The perianth consists of a chalice lined with a calicule that is gamomust made up of 5 green sepals whose length varies from 1.5 to 1.9 cm (7 calicules whose length varies between 1.2cm and 1.8cm).

As for the corolla, it is dialypetal, contorted pre-flowering consisting of 5 red petals with a length of 4.2 to 7cm.

Androme is polystemone with 24 polyande and exserts stamens. The net is inserted at the back with medifixed anthers with the presence of small balls called unripe pollen grain.

The Gynea Is Syncarp and Has Long Hairs at the Carpels.

It consists of 10 free and ovary-shaped carpels with small hairs that are aligned on the ovary and formed of a supero with small hairs that are aligned on the ovary having 5 lodges with cuts between two chambers and presence one egg per box. The styles are welded to the androe with a length ranging from 8 cm and the stigmas are capitulated up to 0.9cm long.

We Did Not Observe The Type Of Fruit In All Individuals.

Floral Formula:

$$* ⚥ K(5)\ C5A\ (\infty)\underline{G}\ 10_1^1$$

Mangifera Indica

A full, punctuated aerial stem shrub with a length of between 400 and 800cm. The circumference of the stem ranges from 71 to 190 cm at the base and decreases to 44 cm at the branching level. The plant has an erect port and branch with branches up to 100 cm in length.

The leaves are alternate, simple and hairless. They are symmetrical and exstipated with a pennate nervation with a petiole up to 0.9 to 6 cm long. As for the limbs, they are green, their dimensions range from 7.2 to 33 cm for length and 2 to 12.2 cm for width. They are launched, whole at the edges, cuneiform at the base and acuins at the top with a cortaceeconsistency.

Inflorescence is a racme letch with a stalk of 15cm. It is a monocline plant with two-flowered flowers.

The flowers are actinomorphic, apical, tetracyclic and hypogynistic with a thalamiflora receptacle. The perianth carries a deciduc dialysal calyic chalice consisting of 5 green sepals ranging in size from 1 to 2.7 cm long.

The rotacead corolla has an open valve pre-flowering consisting of 5 free petals of yellow-stained white colour and between 2.3 and 3.6cm in length. Androme is monadelphus containing 5 welded stamens.

The Gyneca is a syncarp with a single unilocular ovary with only one egg per box.

Its fruit is called drupe and its length is 12cm and sometimes longer.

Floral Formula:

$$* ⚥ K5C5A5\ \underline{G}_1^1$$

DISCUSSION

Comparisons of Our Data with Those of Our Predecessors

The main purpose of this part is to identify the dissimilarities and similarities that exist between our results and those of our predecessors for our species of the material plants described.

Burgmansia Suaveolens

Our analyses show that the species is a shrub, having a port erected, and the coating of the leaf is scabrous. On the other hand, Gautier and Maurice (2000) and Troupin (1983) show that the species is a shrub with a raised port and the coating of the leaf is hairless. This may be due to the influence of the environment because all the individuals of *Burgmansia suaveolens* observed in the city of Bukavu, had scabrous-coated leaves.

Carica Papaya

According to Maurice (2001), it is a solitary flowering tree with alternate lobed leaves and a corolla white colour. Troupin (1983) on the other hand, notes the alternation of leaves and a dialysis corolla. Our investigations show that *Carica papaya* is a shrub with auxiliary flowers, opposite palmatillobed leaves and with a golden yellow color characteristic of the corolla that is gamopetal. Note that Raemaers (2001) describes the species as a shrub with lobed opposite leaves. The consideration of Mauritius (2001), presents *Carica papaya* as tree may depend on its size in the study area. In our site, the species reaching at least 4 m high can only be retained as a shrub.

Helianthus Annuus

Our investigations prove that the species *Helianthus annuus* has an erect port; because it is an annual herb as recognized by Nadau and Maurice (2000). Nyabyenda (2006) calls the port an erected port.

According to Troupin (1985), the leaves are opposite. The results of our analyses with those of Nyabyenda (Op. cit.), prove the presence of alternating leaves. By our observations, the species *Helianthus annuus*, has cordiform leaves. The corolla consists of 5 to 6 yellow petals. As for Raynal (Op. cit), the species has oviform, flowering leaves characterized by 5 purple petals.

Troupin (1985) Describes the Species *Helianthus Annuus* as Having Opposite Leaves

Malvaviscus Arboreus

The species *Malvaviscus arboreus*, by our own observations, found that it is a suffrutex with a port erected. Its leaves have a crenellated, oviform-like edge, without coating. Mauritius (2005) describes the species as a shrub with a spread with roped leaves with a toothed edge. They have a pubescent coating.

Regarding the reproductive organ of this species, our observations corroborate those of previous researchers; nevertheless, we have retained that it is a suffrutex instead of a shrub for Mauritius (2000).

5. *Mangifera Indica*

Van Der Veken (1960), Nyabyenda (op.cit), and Raemaers (op. cit), give the species a morphological appearance of a tree. Our observations go hand in hand with those of Maurice (op. cit), who calls it a shrub. Similarly, Van Der Veken (op. cit) attributed the leaves of this species an apex obubtus, an acute base and the presence of 21 staminodes. Our analyses show that the leaves have an acumine top and a cuneiform base with 5 welded stamens in contrast to Troupin (1983), which found the presence of 6 free stamens.

According to Troupin (1983), the chalice consists of 3 free sepals and 37 free petals. At the end of our investigations, *Mangifera indica* to a perianth made up of 5 free sepals and 5 free petals.

In the city of Bukavu, *Mangifera indica* individuals generally do not reach 10m high; which led us to consider it to be a shrub. On the other hand, the authors cited above observed it as a tree.

- **Comparison With Supra-Taxonomic Characters**

In this part, we will compare the floral formulas of the species described with those of family flowers. It will also be discussed as to the type of fruit for each species included in the table.

Table 7: Species and Families Floral Formulas

Familles (FF : Fr)	**Espèces**
Solanaceae $* \; \hat{\varphi}K(5)\overline{C(5)A5}\;\underline{G}(2)_{\infty}^{2-5}$: baie	*Burgmansia suaveolens* $* \quad \hat{\varphi}K(5)C(5)A\tilde{5}\;\underline{G}_{\infty}^{2}$
Caricaceae $* \; \hat{o}\varphi K5C(5)\;A10\underline{G}(3)_{\infty}^{1}$: baie	*Carica papaya* L $* \; \hat{o}\varphi K5C(5)A0\underline{G}(5)_{\infty}^{1}$: baie
$* \; \%\hat{\varphi}Kx\;C(5)\;A5\bar{G}\;(2)_{1}^{1}$: akène	*Helianthus anuus* L $* \; \%\hat{\varphi}\;Kx C(5-6)A5\;\bar{G}\;(2-3)_{1}^{1}$: akène
Malvaceae $* \hat{\varphi}K(5)\underline{C5A(\infty)}\;\underline{G}\;(5-\infty)_{1}^{5}$: baie	*Malvaviscus arboreus* $* \; \hat{\varphi}K(5)C5A(\infty)\;\underline{G}\;10_{1}^{1}$
Anacardiaceae $* \hat{\varphi}K5C5A5-10\underline{G}\;(2)_{1}^{1}$: drupe	*Mangifera indica* $* \; \hat{\varphi}K5C5A5\;\underline{G}\;_{1}^{1}$: drupe

FF - Floral Formula; Fr: fruit

- The comparison of the different floral formulas gives the following in relation to the floral envelope, the androce and the Gynecea.

➢ ***Burgmansia Suaveolens***

The Solanaceae family plans an androce-welded corolla with 5 epial stamens and an ovary with the number of lodges between 2 and 5. The gynecology is bipartisan. In the species *Burgmansia suaveolens*, we observed a synantlial androce with 5 stamens and a bilocular ovary.

➢ ***Carica Papaya***

For the Caricaceae, we note the presence of androce with 10 free stamens and a tricarpellary gynacea. In the species *Carica papaya*, we found the absence of androe since only the female plant was described during our investigations. The gynecology is made up of 5 welded carpels.

➢ ***Helianthus Annus***

For Asteraceae, the corolla is only made up of 5 petals with a bi-carpellary gynecology. In the species Helianthus annuus, the corolla has 5 to 6 petals; and gynecology is bi to tri carpellaire. that is what our analyses show.

➢ ***Malvaviscus Arboreus***

Malvaceae are characterized by a corolla consisting of 5 welded petals and a polystemone androce. Observations of the species specify the dialypetal corolla consisting of 5 petals. As for gynecology, the family consists of 5 to several welded carpels and an ovary consisting of 5 lodges with 1 to several eggs per box. Our study showed that gynecology is made up of 10 free carpels with the presence of a uniogulate and uniovled ovary.

➢ ***Mangifera Indica***

For the Anacardiaceae family, androce is obdiplostemone with a number of 5 to 10 stamens; our observations show that androme is monadelphus at 5 stamens.

As For Gynecology, The Family Shows That It Is Bicarpellaire.

Our equipment does not allow us to observe the carpels of the species, so we do not have any information on this.

CONCLUSION

Our work focused on the morphological description of the mellow plants of the South Idjwi island flora belonging to the families of Solanaceae, Caricaceae, Asteraceae, Malvaceae and Anacardiaceae.

In order to get to know the flora of South Idjwi, we initially limited ourselves to analyzing the mellow plants. For these plants, we are interested in studying the floral origin of honey and the external structures of these plants. This allowed us to identify similarities and similarities between different species described.

We have described 5 species. And for each of them 10 individuals were observed. These were in different biotopes. Individuals of the same species had some differences in stem length, leaf and petiole, chalice, corolla and leaf symmetries of species.

During our descriptive study 5 families, 5 species belonging to the Branch of Magnoliophyta, the Subbranch of the Rosophytina, in 2 classes (Rosopsida and Asteropsida), 2 subclasses (Rosidae and Asteridae), 5 orders (Solanales, Brassicales, Asterals, Malvales and Sapindales) were observed.

The morphological description shows that all species had an erected port, with the exception of *Helianthus annuus* which has an erect port. In relation to leaf coating, all species have surfaces that are, either hairless, pubescent and scabrous, with hermaphrodite or bisexual flowers. In terms of floral symmetry, all species are actinomorphic, except *Helianthus annuus* which has zygomorphic symmetry. As for Gymea, they all have a high-top ovary unlike the species *Helianthus annuus*, which has only one inference ovary.

In This Critical Moment, We Encountered The Following Difficulties:

- The sting by bees during our investigations;
- The lack of documents dealing with beekeeping and mellow plants.

Suggestions:

- Let botanists give themselves to the morphological description of honey plants which, has never been the object in the city of Bukavu so that they recognize the originality of honey from the nectars' collected by the bees in order to return a list species found in the city of Bukavu.

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