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Traditional communities of Luozi (DRC) and spontaneous flora food Resource

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Abstract

The food use of spontaneous flora from Luozi (DRC) is studied through the exploitation of traditional communities. Very often, the food potential of spontaneous flora is underestimated and almost not valued. The associated corollary is to see all related knowledge disappear. The study carried out in the ten sectors of the Luozi territory aims to promote the food species of the populations of the Luozi territory. The study method is focused on the ethnobotanical inventory based on a questionnaire coupled with individualized interviews and/or focus groups. The taxonomic analysis reveals 23 species representing 20 genera and 14 families of which *Apocynaceae* is the most diverse. Fruits and leaves are the most prized organs. Depending on the level of knowledge, *Solanumamericanum* is the most popular taxon, while *Toxocarpusbreyipes* has the highest ethnobotanical use value within communities (VAUS ≥ 0.95). Depending on the exploitation of flora, the traditional communities of Luozi do not form a homogeneous group. The Luozi territory is full of very diverse plant potential and of great nutritional value.

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Introduction

Plants are not only a source of medicine, but also a food supply for many people around the world. Speaking of the source of food supply, Heywood and Hunter (2011) state that "*the collection of wild relatives of cultivated plants constitutes an enormous reservoir of genetic variability which is usable in plant breeding programs and is essential to both to improve food security, boost agricultural production and maintain productivity in the face of rapid global population growth and accelerating climate change*." Ducerf (2013) adds: "*We have around us a multitude of mushrooms, plants and wild fruits which can help us compensate for a shortage of food products of cultivated origin*". Among the most interesting plants in the event of famine, Ducerf (2013) talks about the most common species, growing everywhere and the most nutritious from a dietary point of view.

According to the FAO (1993, 2011, 2013a, 2015) forest species play an important role in the survival of African populations, especially in times of war, drought and invasion of crops by locusts.

Today around 30 species of plants provide the majority of plant-based foods, compared to more than 30,000 known worldwide. These plants are only rarely used by the population and most have never been the subject of an assessment of their nutritional values and agricultural potential (Plotkin, 1988; Ten Kate and Laird, 1999; Vietmeyer, 1986). Wild plants have the advantage of being better adapted to eco-climatic conditions (Ten Kate and Laird, 1999). Thus, to solve the problem of undernutrition and malnutrition, the domestication of edible spontaneous plants, once their nutritional value has been established, is very important.

In Africa, hundreds, if not thousands, of wild plants are used daily, not only by a few forest communities, but also by the majority of peoples (Grivetti *et al.*, 1987). These wild plants contribute significantly to the diet by ensuring survival, in times of scarcity, by providing rare nutrients in the food ration (Tulchinsky, 2010). In Central Africa and in particular in the Democratic Republic of Congo, the value of indigenous plants for feeding rural populations is widely recognized (Matabaro *et al.*, 2016).

Several ethnobotanical works relating to food plants have been carried out in the Democratic Republic of Congo. Without being exhaustive, let us highlight the studies of Bokdan and Droogers (1975) on the Wagenia of Kisangani, Udar (1983) on the plants among the Batsiabetuwa of Mbie island, Mosango&Szafranski (1985) on the wild plants with edible fruits in the surrounding area. From Kisangani, Nyakabwa*et al.* (1990) on wild food plants among the Kumu of Masako in Kisangani. Liengola (2001) on spontaneous food plants among the Turumbu and Lokele of the Tshopo District, Eastern Province. Biloso (2008) on the valorization of non-timber forest products from the Bateke plateaus on the outskirts of Kinshasa, Maombi (2013) on the identification of spontaneous food plants and their contribution to the household income of the population living around the forest of Uma (Ubundu Territory in Provinciale Orientale, DRC) and Lassa *et al.* (2024) on food plants used in the Kimvula territory. Few studies have been undertaken on the traditional communities and food resources of the spontaneous flora of the Luozi territory.

Among the research questions in ethnobotany, the two most important are: what are the social factors influencing the use of the plant or knowledge about the plant? and, what are the food uses of the spontaneous floristic resource of the Luozi territory? These questions lead us to say that there is a spontaneous flora for food use known to the populations of the Luozi territory and that they form the same traditional community. This research aims to promote species for food use by the populations of the Luozi territory. It is precisely a question of inventorying, of indicating the modalities of food uses.

To achieve the intended goal, the specific objectives assigned are:

Characterize the food resource of the spontaneous flora of the Luozi territory in relation to uses ;

Evaluate the knowledge of populations related to food plants.

Materials and methods

Study environment

The Luozi territory is an administrative entity of the Kongo-Central province. The said territory is limited to the North and the East by the Republic of Congo; to the South by the Congo River separating it from the territories of Songololo and Mbanza-Ngungu and to the West by the territory of Seke-Banza (Fig. 1). The territory of Luozi is located between 4° and 6° south latitude, between 13° and 14° east longitude.

With an estimated area of 7772 km2 and an altitude varying from 180 to 800 m, the territory of Luozi is made up of 11 decentralized entities including the city of Luozi (capital of the territory) and ten sectors: Balari, De La Kenge, Kimbanza ,Kimumba, Kinkenge, Kivunda, Mbanza-Mona, Mbanza-Mwembe, Mbanza-Ngoyo and Mongo-Luala. The territory has 37 groups, nearly 738 villages and more or less 78,627 farming households (Kimpianga, 1989; Anonymous, 2017).

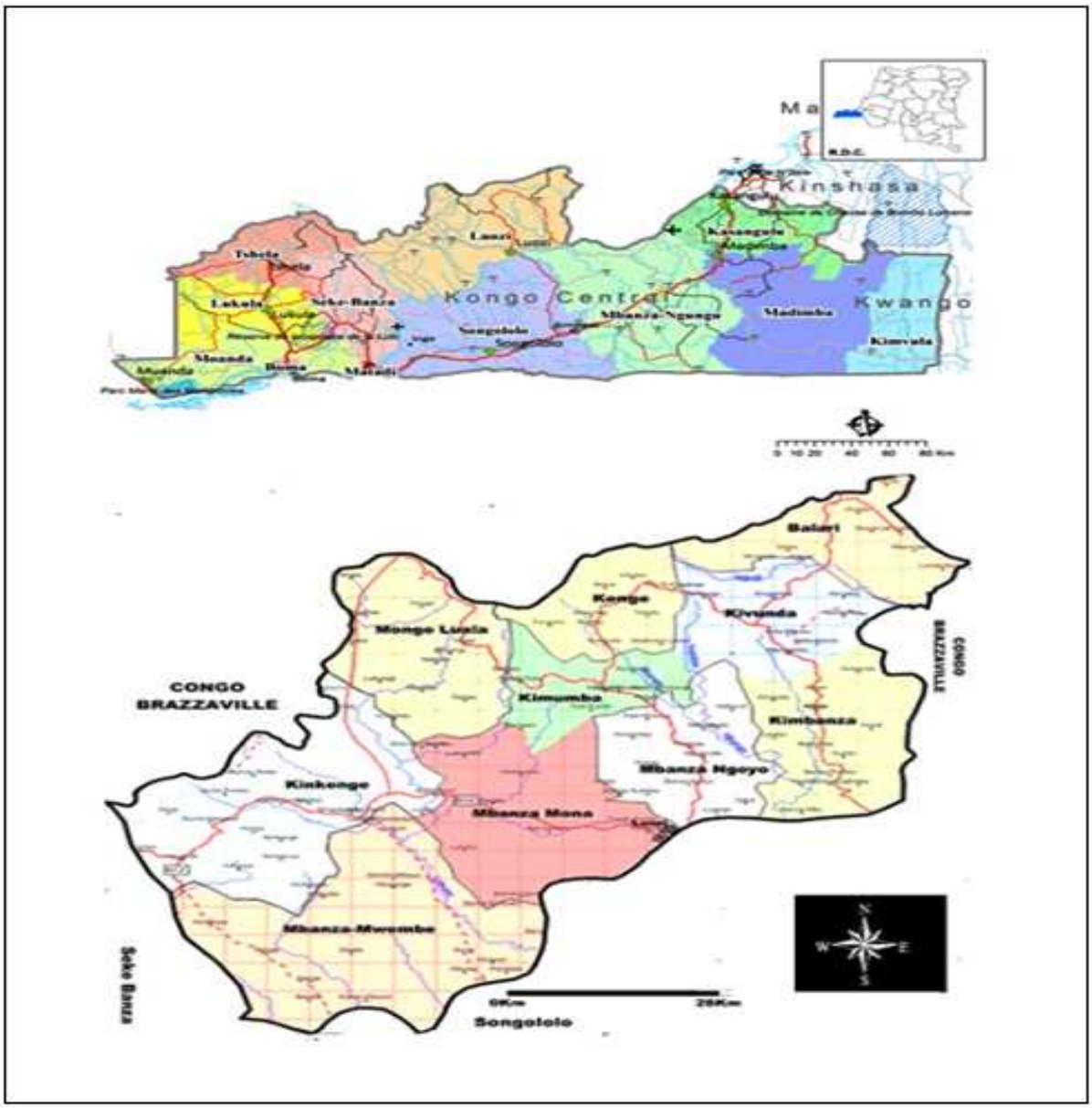

Fig. 1. Map of the geographical and administrative location of the Luozi territory.

Source: Development Indicators Analysis Unit (C.A.I.D.)

The climate is type AW4, according to the Köppen-Geiger classification (1900, 1936) and characterized by the alternation of two seasons. A four-month dry season lasting from June to September and an eight-month rainy season (October to May) (Kimbembi*et al.,* 2014).

Materials

The plant material which was the subject of study is collected in the villages of the ten sectors and the herbarium specimens of which are preserved at the Herbarium "IUK" (IUK = INERA and UNIKIN) in Kinshasa. The classification adopted is APG IV (2016) for Angiosperms. As for the nomenclature, Lebrun and Stork (1995-2015) was followed.

Study methods

The study methodology follows three levels, namely (i) the literature review, (ii) the ethnobotanical survey and (iii) the floristic and participatory survey. The literature review is an essential element bringing out the point on the theme in and around the study area.

Ethnobotanical survey method

The choice of people surveyed was made using the non-probabilistic quota method with a rate of 25% applicable to ethnobotanical studies. The surveys were carried out in two phases, from September to October 2020 and from September 2021 to January 2022, in the 10 sectors of the Luozi territory, based on a previously tested questionnaire.

In total, 11,024 informants from 2,294 households were interviewed. The distribution of respondents by sector is not uniform. Indeed, the act of survey being participatory and not obligatory, only willing people with knowledge were involved. The areas close to the city of Luozi constitute the entry point with more people interviewed.

The people interviewed are of different ages: from under 20 to over 60. The age group with the largest number of respondents is between 20 and 40 years old. Table 1 presents the gender and marital status of users interviewed in Luozi territory. Married men and women are the best represented categories. This can be explained by social stability and respect for customs. According to our customs a woman must be married.

This study was carried out from a series of ethnobotanical surveys using semi-structured interviews based on a questionnaire previously developed in each sector and focused on uses and spontaneous food plants. Each time, before starting the investigation, we held meetings to inform the villagers of the objectives of our work and also to set appointments. Information relating to the uses of spontaneous food plants was collected during collective and individual interviews.

Participants were asked to name all the plants they know of for uses by the majority of the local population. The main question asked is: "what spontaneous food plants do you know?".

The information focused on spontaneous food plants (local names) used to satisfy their primary needs such as food, parts of plants collected, their uses, and finally any additional relevant information.

During the collective interviews, we let the participants name the plants without asking them whether they also used this or that other plant in their sector for this or that other use.

Expression of results

The use value of cash was calculated according to the method used by Phillips & Gentry (1996), and Camon-Guerrero *et al.* (2008) following the formula:

$$Vu_{(k)} = \sum^{n_i} \frac{C_i}{N} \quad (1)$$

Where: Vu(k) is the ethnobotanical use value of species k within a given use category, Ci, is the use score attributed by respondent i, n is the number of respondents for a given category of use.

The local cultural importance (Ilumbe, 2010) was determined according to the use value of each

identified species (VUs) and which was calculated according to the simplified formula

$$VUs = \frac{\sum_{i=1}^{n} Uis}{ns} \quad (2)$$

Where Uis equals the number of uses of the species mentioned by informant i and ns equals the number of people having mentioned this species;

The confirmation index (CIs) was calculated according to the formula

$$ICs = \frac{Na}{Nt} \quad (3)\ ;$$

Where ICs is the confirmation index, Na = number of people having mentioned this species and Nt = total number of those interviewed;

The Usage Agreement Value or VAUs was calculated by combining the two formulas (VUs and ICs) into a single Usage Agreement Value (VAUs) which is defined as

VAUs= VUs x ICs(4).

In order to better present the results obtained, we combined the criteria of knowledge and effective consumption according to Ambé (2001). The level of knowledge and village consumption is estimated as a percentage (Pr).

The percentage of each species was calculated relative to the number of people recognizing the species (n) to the total number of people surveyed (N). It is translated by the formula:

Pr = n/N*100 (5)

The Dajoz method (1982) made it possible to divide the species into three groups: the first, of 50 and 100%, includes the best-known species; the second, from 25 to 50%, contains moderately known species, and the third, from 0 to 25%, includes little-known species.

Inter and intra sector relationship in plant use

By determining the groups and the ordination, the hypothesis will be verified according to which the inhabitants of the Luozi territory form the same community in the use of spontaneous food plants. An ascending hierarchical matrix obtained from the Jaccard similarity coefficient will be used to construct a classification of surveys or informants by sector, for our case. The distinction between plant uses can be made between sectors in general, depending on the presence/absence of plants using the similarity measure.

Calculating a similarity coefficient makes it possible to quantify the degree of association of two species, or the level of similarity between sectors taking into account their floristic composition for example (Kent & Coker, 1996; Stokes *et al.,* 2000 Magurran, 2004). Thus, the chosen Jaccard index focuses on double presences (a), that is to say on plants observed as used by successive sectors. The maximum similarity is 1, with 0 being the minimum. The content of these matrices is visualized in the form of dendrograms.

Results and discussion

Results

Floristic inventory of food plants

A total of 23 spontaneous species with a food role were inventoried (Table 2). The importance of the number of taxa inventoried nevertheless demonstrates the major role played by these plants in the diet of local populations.

These species are divided into 14 families and 20 genera. The most represented families are Apocynaceae (7 species), Fabaceae and Moraceae with respectively (2 species each).

Parts consumed

The fruits and leaves are the most consumed parts in the Luozi territory. In terms of number of species inventoried, fruits represent 47.83% and leaves 47.83% of all species. In terms of number of citations, fruits were cited with a rate of 59.83% while leaves were cited with a rate of 40.03% (Table 3).

Table 1. Characteristics of informants by sector.

Sectors	Profile							
	Gender			Civil status				
	Men	Women	Total	Married	Singles	Divorced	Widowed	Total
Balari	54	26	80	57	18	2	3	80
De la Kenge	53	36	89	38	50		1	89
Kimbanza	56	29	85	66	7	4	8	85
Kimumba	108	69	177	97	79		1	177
Kivunda	178	155	333	244	59	12	18	333
Mbanza-Mona	144	98	242	167	67	3	5	242
Mbanza-Ngoyo	184	99	283	154	115	3	11	283
Mongo-Lualal	131	110	241	139	81	10	11	241
Kinkenge	178	165	343	224	111	2	6	343
Mbanza-Muembe	252	169	421	241	163	9	8	421
Total (%)	58,33	41,67	100	62,21	32,69	1,96	3,14	100

Cultural diversity of food plants

Depending on the ethnobotanical use value, the food species with a high ethnobotanical use value are: *Toxocarpusbreyipes* (0.95), *Landolphiaparvifolia* (0.93), *Landolphiagentilii* (0.68), *Solanumamericanum* (0.66), *Psophocarpusscandens* (0.65), *Passiflorafoetida* (0.61), *Syzygiumjambos* (0.60), *Carpodinusgentilii* (0.55), *Strychnoscocculoides* (0.54) and *Landolphiaowariensis* (0. 51).

Twenty-three (23) spontaneous food plants were inventoried in the Luozi territory. The latter belong to the three categories of level of knowledge of food plants, according to the relative degree of knowledge of the informants varying from 66.16 to 14.65%. Well-known species vary from 66.16 to 54.04%. *Solanumamericanum*, for example, which has a knowledge level of 66.16%, is a species that has important food value for the population of Luozi territory. Moderately known species (varying from 49.49 to 32.83%) and little-known species, presenting relative knowledge values ranging from 22.73 to 14.65%, were cited in ten data collection sectors or in a single sector (Table 2).

Local cultural significance of food plants

Food plants used in Luozi territory with their VUs, ICs and VAUs index values are presented in Table 4. The species arrangement based on utilization values (UVs) gives different results compared to the arrangement based on informant consensus values (ICs). If the classification based on VUs favors food plants used for several uses, that based on the values of the informant consensus index favors food plants used or known in several sectors.

The classification made from the use values (VUs), all species have the same percentages (Table 4).

By classifying the species according to the confirmation index (CIs), they are the species *Toxocarpusbreyipes* (0.95%), *Landolphiaparvifolia* (0.68%), *Solanumamericanum* (0.66%), *Psophocarpusscandens*(0.63%), *Syzygiumjambos* (0.60%), Carpodinusgentilii (0.55%), *Strychnoscocculoides* (0.54%) and *Landolphiaowariensis* (0.51%) which take said position. By combining the VUs and ICs values into a usage agreement value (VAUs), the food species with a high usage agreement value are Toxocarpusbreyipes (0.95%), *Landolphiaparvifolia* (0.68%), *Solanumamericanum* 0.66%), *Psophocarpussscandens* (0.63%), *Syzygiumjambos* (0.60%), *Carpodinusgentilii* (0.55%), *Strychnoscocculoides* (0.54%) and *Landolphiaowariensis* (0 .51%) which have values greater than 0.50%.

Intra and inter sector relationship on the use of food plants

The 23 spontaneous food plants cited during the various interviews were subjected to ascending hierarchical classifications.

Table 2.Food plant species in the Luozi territory and ethnobotanical data.

FAMILY	SPECIES	VERNACULAR NAME	Consumption method	Organ consumed	Method of preparation	Ci	Vus	n	Pr
Passifloraceae	*Adenialobata*(Jacq.) Engl.	Nzeya, ndieya, nzieya	Vegetables/Sauce	Leaf	Cooked	38	0,19	38	19,19
Zingiberaceae	*Aframomumangustifolium*(Sonnerat) K. Schum (syn. *Aframomumsanguineum*K. Schum)	Binsikidi-nsiadi	Dessert	Fruit	Ripe	31	0,16	31	15,66
Fabaceae/Mimosoideae	*Albiziaadianthifolia*(Schum.) W. Wight	Mulu, n'lu	Vegetables/Sauce	bud	Cooked	29	0,15	29	14,65
Amaranthaceae	*Amaranthusblitum*L.	Lambia, Munsala-bana	Vegetables/Sauce	Leaf	Cooked	36	0,18	36	18,18
Apocynaceae	*Carpodinusgentilii*De Wild.	Manzinga, manzenga	Dessert	Fruit	Ripe	108	0,55	42	21,21
Cucurbitaceae	*Cogniauxiapodoleana*Baill.	Kisakamba, nkoza	Vegetables/Sauce	Leaf	Cooked	97	0,49	39	19,7
Burseraceae	*Dacryodesyangambiesis*Lam. ex Troupin	Mfiela, mufiela	Dessert	Fruit	Ripe	74	0,37	74	37,37
Moraceae	*Dorsteniaconvexa*De Wild.	Kinkoka	Vegetables/Sauce	Leaf	Cooked	58	0,29	58	29,29
Moraceae	*Dorsteniapsilurus*Welw.	Makaya-mayaka,	Vegetables/Sauce	Leaf	Cooked	65	0,33	65	32,83
Acanthaceae	*Hypoestesvericillaris*(L.f.) Sol. ex R. & S.	Nuni bola	Vegetables/Sauce	Leaf	Cooked	98	0,49	32	16,16
Apocynaceae	*Landolphiaforetiana*(Pierre ex Jumelle) Pichon	Lombodianzadi	Dessert	Fruit	Ripe	89	0,45	89	44,95
Apocynaceae	*Landolphiagentilii*De Wild.	Malombo, lombo	Dessert	Fruit	Ripe	135	0,68	89	44,95
Apocynaceae	*Landolphiaowariensis*P. Beauv.	Malombo, lombo	Dessert	Fruit	Ripe	101	0,51	98	49,49
Apocynaceae	*Landolphiaparvifolia*K. Schum.	Malombo, lombo	Dessert	Fruit	Ripe	184	0,93	77	38,89
Passifloraceae	*Passiflorafoetida*L.	Bimpola-mpola	Dessert	Fruit	Ripe	121	0,61	71	35,86
Pentadiplandraceae	*Pentadiplandrabrazzeana*Baill.	Mbende	Vegetables/Sauce	Leaf	Cooked	37	0,19	37	18,69
Solanaceae	*Physalisangulata*L.	Kiniumba	Vegetables/Sauce	Leaf	Cooked	78	0,39	78	39,39
Apocynaceae	*Picralimanitida*(Stapf) T. Durand & H. Durand	Mukonki	Dessert	Fruit	Ripe	33	0,17	33	16,67
Solanaceae	*Solanumamericanum*Mill.	Niumbu	Vegetables/Sauce	Leaf	Cooked	131	0,66	131	66,16
Fabaceae/Faboideae	*Psophocarpusscandens*(Endl.) Verdc	Kikalakasa	Vegetables/Sauce	Leaf	Cooked	128	0,65	112	56,57
Loganiaceae	*Strychnoscocculoides*Baker	Muhoki, kihodihodi	Dessert	Fruit	Ripe	107	0,54	107	54,04
Myrtaceae	*Syzygiumjambos*(L.) Alston	Mfuluta, malundu	Dessert	Fruit	Ripe	119	0,6	119	60,1
Apocynaceae	*Toxocarpusbrevipes*(Benth.) N.E.Br	Ndulunsi	Vegetables/Sauce	Leaf	Cooked	45	0,95	45	22,73

Legend: Ci: number of citations of the species, Vus: ethnobotanical value, n: number and Pr: level of knowledge of food plants.

This is with the aim of seeking links between the different people interviewed across the different sectors on spontaneous food plants used in the Luozi territory. The classification is made based on the criterion "spontaneous food species used in the territory of Luozi".

The results show that the populations of the 10 sectors of Luozi constitute two different groups in terms of the consumption of plants from the flora of the territory. Examination of the dendrogram (Fig.3) shows a low similarity of 5% between the inhabitants of group 1 and those of 2. The species *Adenialobata*, *Carpodinusgentilii* and *Dorsteniaconvexa* characterize group 1, while *Dacryodesyangambiensis* and *Hypoestesvericillaris*stand out. 2. Despite this great demarcation, differences of varying degree emerge between the traditional communities making up the groups. In group 2, a similarity link of 60% exists between the inhabitants of the Kivunda sector and the inhabitants of the MbanzaMuembe sector with three characteristic species: *Landolphiagentilii*, *Landolphiaowariensis* and *Solanumamericanum*, and a similarity link of 90% between the inhabitants of the De la Kenge sector and those of the Kimumba sector with four characteristic species: Physalisangulata, Aframomumangustifolium, Toxocarpusbavipes and Cogniauxiapodolaena.

Table 3. Parts consumed by the population of Luozi territory.

Parties utilisées	Nbrsp	%	Nbrcit	%
Bub	1	4,34	1	0,14
Leaf	11	47,83	299	40,03
Fruit	11	47,83	447	59,83
Total	23	100,00	747	100,00

Legend: Nbrsp: number of species, Nbr cit. : number of citations and %: percentage).

Discussion

The floristic analysis shows that a diversity of food plants is known and forms part of the eating habits and customs of the populations of the territory. From this floristic diversity, a good number of organs are consumed either alone directly after picking (fruits) or in households as vegetables. The diversity of vegetable plants and especially harvested plants is linked to the different places of collection which are home gardens, surrounding plant formations (savannahs, forests, etc.), fallows, fields. On the subject of wild food plants, Busson (1965) said that wild vegetables, like other forms of consumption of wild food plants, play an important role for the well-being of rural communities in developing countries. Spontaneous food plants easily replace vegetables grown during periods of scarcity (Asfaw and Tadesse, 2001). Wild vegetables constitute nutritional supplements, very essential for a balanced diet (Somnasang and Moremo-Black, 2000).

Table 4. Food species used in the Luozi territory with their use agreement values.

Species	NS	NI	NU	NC	VUs	ICs	VAUs
Adenialobata (Jacq.) Engl.	3	38	1	38	1,00	0,19	0,19
Aframomunsanguineum (K. Schum) K. Schum	1	31	1	31	1,00	0,16	0,16
Albiziaadianthifolia var. *adianthifolia* (Schumach.) W. Wight	1	29	1	29	1,00	0,15	0,15
Amaranthusblitum L.	4	36	1	36	1,00	0,18	0,18
Carpodinusgentilii De Wild.	2	108	1	108	1,00	0,55	0,55
*Cogniauxiapodoleana*Baill.	5	97	1	97	1,00	0,49	0,49
*Dacryodesyangambiesis*Lam. ex Troupin	4	74	1	74	1,00	0,37	0,37
Dorsteniaconvexa De Wild.	1	58	1	58	1,00	0,29	0,29
*Dorsteniapsilurus*Welw.	3	65	1	65	1,00	0,33	0,33
Hypoestesvericillaris (L.F.) Sol.ex R.& S.	2	98	1	98	1,00	0,49	0,49
Landolphiagentilii De Wild.	2	184	1	184	1,00	0,49	0,49
Landolphia foretiana (Pierre ex Jumelle) Pichon	1	89	1	89	1,00	0,45	0,45
Landolphiaowariensis P. Beauv.	5	101	1	101	1,00	0,51	0,51
Landolphiaparvifolia(K. Schum) K. Schum	3	135	1	135	1,00	0,68	0,68
Passiflorafoetida L.	1	71	1	71	1,00	0,36	0,36
*Pentadiplandrabrazzeana*Baill.	1	37	1	37	1,00	0,19	0,19
Physalisangulata L.	1	78	1	78	1,00	0,39	0,39
Picralimanitida (Stapf) T. Durand & H. Durand	2	33	1	33	1,00	0,17	0,17
*Solanumamericanum*Mill.	2	131	1	131	1,00	0,66	0,66
Psophocarpusscandens (Endl.) Verdc	6	124	2	124	1,00	0,63	0,63
Strychnoscocculoides Backer	2	107	1	107	1,00	0,54	0,54
Syzygiumjambos(L.) Alston	1	119	1	119	1,00	0,60	0,60
Toxocarpusbrevipes(Benth.) N.E.Br	5	189	1	189	1,00	0,95	0,95

Legend: NS: number of sectors, N.I: number of informants, N.U: number of uses, N.C: number of citations, VUs: use value of the species, ICs: confirmation index and VAUs: value of user agreement.

The predominance of fruit plants observed in the territory but also elsewhere (N'dri*et al.*, 2008a, 2008b; Kouamé*et al.*, 2008; Paluku*et al.*, 2011; Termote *et al.*, 2011; Lulekal*et al.* , 2011; perhaps argued by the fact that in the field of food, many species produce edible fruits. And also the fairly large number of fruits cited shows their importance in covering the energy and protein or vitamin needs of populations. The availability of most fruits coincides with the start of field work and the decline in food

supplies (Kristensen and Balslev, 2003). At the moment, the availability and consumption of wild fruits constitutes a considerable contribution to household diets since, according to Guinko and Pasgo (1992), wild fruits contribute to a varied diet in terms of vitamin intake. The consumption of the fruits of most of the species mentioned is confirmed by several studies (Ambé, 2001; Kristensen and Balslev, 2003; Taïta, 2003).Leaves are organs present on plants almost throughout the year, which makes them available at all times. Most often, the leaves are used as a base for making sauces, stews and condiments. The importance of fruits is due to their high nutritional value and also to the fact that derived products (oil, etc.) can be preserved better (Lassa, 2024).

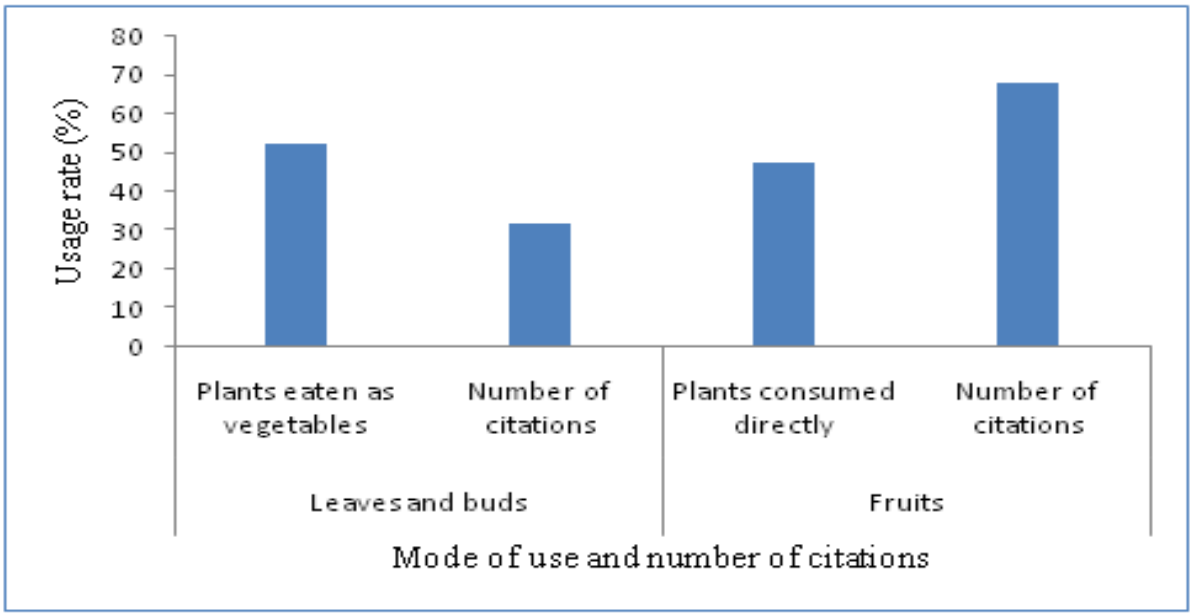

Fig. 2. Mode of use and number of citations.

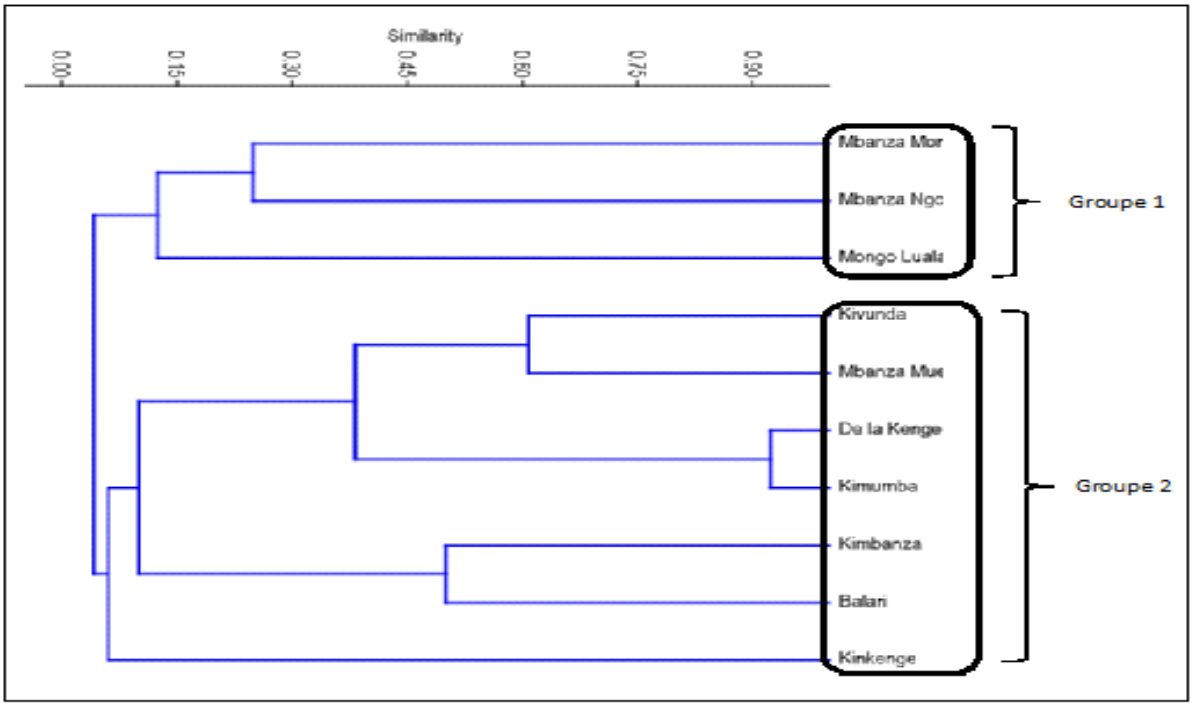

Fig. 3. Groups formed by populations from different sectors in the use of useful plants following the Nearest neighbor method. (Mbanza Mo: Mbanza Mona, Mbanza Ngo: MbanzaNgoyo, MbanzaMue: MbanzaMuembe).

Despite the importance of food plants, the method of harvesting the different organs consumed (leaves, fruit, flower, root, etc.) constitutes in certain cases a danger for the survival of species (Frebergeret *al.*, 1998). In addition to the method of collection, the development and sustainable management of these resources must take into account socio-cultural realities and the sharing of tasks in rural communities.According to Saadoue*t al.* (1995), around a hundred species of spontaneous flora offer leaves, fruits, roots and tubers that are regularly sought, picked and consumed or even sold. Codjia *et al.* (2003) point out that knowledge of edible plants and their consumption is fundamental for populations with an economy based on harvesting and the marketing of non-timber forest products. According to Dan *et al.* (2012) the organs consumed from plants are of particular importance for different social categories, because they are a source of vitamins, mineral salts and proteins in a diet where cereals are dominant. In Luozi territory, there is a potential source and reservoir of food plants. Spontaneous food species are the subject of intense exploitation by local populations. These species are very rarely sold in the markets in Luozi. The strong exploitation of wild plants suggests a complement to the food production of the populations of the territory. Production from their main activity which is non-mechanized subsistence farming. The food species with a high ethnobotanical use value found in the territory are well appreciated even if they are not the same as those inventoried in the Kimvula territory by Lassa *et al.* (2024).

Conclusion

The Luozi territory is full of very diverse plant potential and of great nutritional value. Correlatively with the above, this potential has made it possible to highlight the major role that plant species play in the daily life of the rural population of the territory. This, in relation to the uses of products constituting one of the main sources of food. The promotion of food plants requires carrying out in-depth studies on various themes in order to better understand these products and the related resources.

This study provides an overview of the food plants of the Luozi territory with particular emphasis on the characterization of uses. It also highlighted the diversity of species and uses of plants playing an important role for rural populations. In their isolation and in their difficulties, populations master the virtues of the surrounding floristic diversity in the function of food plants.

Given the problems generated by the abusive use of food resources of spontaneous flora in the territory of Luozi, we plan to carry out the following activities to promote them. The logical continuation of this work should be: monitoring a group of users of food plants all year round to better assess the quantities harvested, collecting data with a view to characterizing these species floristically and structurally and attempting to domestication experiments especially for species that have the highest use values to avoid the vulnerability of these species.

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