



Research Article

PROFILE OF THE SELLERS AND ANALYSIS OF FOOD AVAILABILITY OF THE LEAVES AND STEMS OF THE DIOSCOREA LIEBRECHTSIANA OF WILD "NTINIA" IN THE WALKS OF BRAZZAVILLE (CONGO)

Loubélo A.B¹, Mialoundama Bakouétila G.F^{2,3*}, Nsondé Ntadou F. G⁴, Bouhika E.J¹, Bacquois J.G², Mbougou Z¹, Bamokina Bélo J.I³, Bayoundoula N³ and Mbemba F¹

¹Laboratory of Physiology of the Effort and Biomechanics, Superior Institute of the Sciences of the Physical Education and Sport. University Marien Ngouabi, BP,: 6118

²Laboratory of Economy and Sociology Farming, Superior National School of Agronomy and Foresterie. University Marien Ngouabi

³Superior Institute of Agroalimentary Technology and Agronomy, University Free of Congo

⁴Laboratory of Biochemistry and Pharmacology, Faculty of the Health sciences, University Marien NGOUABI

ARTICLE INFO

Article History:

Received 9th November, 2016

Received in revised form 12th December, 2016

Accepted 5th January, 2017

Published online 28th February, 2017

Key words:

Dioscorea liebrechtsiana Of Wild, food availability, profile.

ABSTRACT

Objective: to valorize the *Dioscorea liebrechtsiana* Of Wild "Ntinia".

Methodology and results: the investigation interested 54 sellers of Ntinia in the 8 markets of Brazzaville to know: Commission; bourreau; Madibou; Total; Talangai; Ouenzé; The Tsiémé; Bifouiti. The choice of the sample has been made on the basis of a non probabilistic sampling, because of the absence of an exhaustive list of the sellers of 'Ntinia'. The collected data have been dealt with the software Cspros 6 Statas 11.

The results gotten in the setting of this work show that: 87,04% of the women hold the sale of 'Ntinia' and 12,96% of the men participate on the whole to the sale, 77,37% of the sellers have a secondary level and 55,55% of the sellers have an experience of more than 3 years in the sale of the 'Ntinia'.

The 'Ntinia' is available on the market of September to February; he disappears on the market during six months, of March to August. The 'Ntinia' consumed in Brazzaville comes often of the long circuits of merchandising.

The sellers make resort to several techniques of conservation.

Finally, the survey reveals that the sellers are confronted to the problems of storage and the conservation of 'Ntinia'. 98, 15% are satisfied with this trade.

Conclusion: The merchandising of the 'Ntinia' is a generating activity of income that allows those that practice it to face the vital needs of the households. Some measures should be sought-after in order to improve the conservation and the storage of this PFNL. Besides, propertied of the therapeutic virtues, some future studies are necessary.

© Copy Right, Research Alert, 2017, Academic Journals. All rights reserved.

INTRODUCTION

In the tropical and subtropical forests, particularly situated in Africa, in Asia and in Latin America, the importance of the woody forest products (PFNL) is not anymore to demonstrate. These pfnl completes the agricultural production of the households while bringing them the essential nutritional commodities, of the products to medicinal use, fodder, straw and the incomes. They are suppliers of the emergency food during the period of soldering, and constitute a net of food security of emergency against the seasonal risks and in case of urgent necessity for the households (Mukerji, 1995).

The *Dioscorea liebrechtsiana* Of Wild "Ntinia" is a wild yam presents in the forest ecosystems of central Africa and notably in the Congo Brazzaville in all departments (Nkounkou, 1993).

During the thesis last years, the trade of the PFNL intensified more and more in the urban environment whereas hardly as, it was reserved to the farming environment and in the perimeters of big cities (Biloso, 2003). The young shoot of the *Dioscoreas liebrechtsiana* Of Wild "Ntinia" is used as vegetable salad or as purification for various dish (Mambou, 2004; Mbemba and al, 2016).

In Brazzaville the consumers of the *Dioscorea liebrechtsiana* Of Wild "Ntinia" get a stock in the different markets details (face 1) of the city (Mbemba and al, 2016).

In period of food availability, this pfnl is consumed regularly by the households.

Thus, the sale of the 'Ntinia' seems to be a generating activity of come back, assured by the men and the women of various profile during his/her/its period of food availability.



Face 1 heap of the 'Ntinia' sold to the total market of Brazzaville

The valorization of a product requires the food knowledge, the merchandising and the knowledge of the nourishing value. The main objective of this survey is to valorize the *Dioscorea liebrechtsiana* Of Wild "Ntinia". In a specific manner, it is about:

- To identify the profile of the sellers of the 'Ntinia';
- To analyze the food availability of the 'Ntinia';
- To describe the circuits of merchandising of the 'Ntinia' sold to Brazzaville;
- To discover the major problems of the sale of the 'Ntinia'.

METHODOLOGY

SAMPLING AND COLLECTION OF THE DATA

The survey concerned the sellers of 'Ntinia' in the city of Brazzaville in Republic of Congo. The choice of sampling it has been made on the basis of a non probabilistic sampling that means reasoned choice. 8 markets have been kept, according to their importance (market of big and main markets of details). It is about the markets of Commission, Executioner, Madibou, Total, Bifouiti, Talangai, Ouenzé, and the Tsiémé.

Considering the absence of an exhaustive list of the sellers the constitution of our sample made itself here on the basis of the criteria's - after: to be seller of 'Ntinia' in one markets kept for the survey, to be present at the time of the investigation and to be available to answer the questions put on basis of these criteria's, 54 sellers was the subject of our samples.

The investigation consisted in a collection of the information with the help of the individual interview with the sellers of the 'Ntinia'. The interviews have been done with the help of a questionnaire understanding the following categories: profile of the sellers, food availability of the 'Ntinia', the knowledge of the merchandising circuits, of forced them of merchandising, etc.

The collection of the data took place during the months of September 2014 to February 2015.

Treatment and Analysis of the Data

The data collected by the sellers at the end of the investigation have been seized with the software Cspro 6 in order to constitute a data base. This data base has been imported on the software Stata 11. And has permitted of easiness the spoliation and the analysis of the data.

The data descended of the documentary analysis, the direct observations and the free talks were the subject of an analysis of contained in order to make the exploitable.

RESULTS

Profil of the sellers of the *dioscorea liebrechtsiana* of wild "ntinia"

The sale of the *Dioscorea liebrechtsiana* Of Wild is a generating activity of income that mobilizes the men and the women. The picture 1 represents the distribution of the sellers according to the kind. The trade of the *Dioscorea liebrechtsiana* Of Wild "Ntinia" is dominated by the women, either a frequency of 87, 04%.

Picture 1 Repair of the sellers of 'Ntinia' according to the sex.

Kind	Strength	Frequency %
Woman	47	87,04
Man	07	12,96
Total	54	100

The men are less implied in the sale of the 'Ntinia' is however 12, 9%, it is important to underline that this last dominates the trade of big.

The Woman/Men ratio shows that the women are close to 7fois more numerous than the men; they are implied more in the trade of details.

The more part of the sellers investigated are bachelors, it represents a frequency of 68, 52 these bachelors, are for the more part chief of households. The other social categories are represented weakly (picture 2), she/it represents 3, 70% of divorced person, and 27, 78% for the other categories.

Picture 2 Distribution of the sellers of 'Ntinia' according to the matrimonial situation.

Situation matrimonial	Strength	Frequency %
Bachelor	37	68,52
Divorced	2	3,70
Married	5	9,26
Free union	5	9,26
Widower	5	9,26
Total	54	100

87, 14% of the sellers of 'Ntinia' have an age superior than 30 years; the survey to revealed also that the young are less represented in the trade (picture 3).

Picture 3 Distribution of the sellers according to the age group.

Age group	Strength	Frequency (%)
20 - 29	7	12,96
29 - 39	14	31,48
40 years and more	31	55,66
Total	54	100

The age group the more represented among the sellers is the one having more than 40 years, either 55, 66%. This elevated rate can explain itself by the position that they occupy within the households (chief of households or conjoined) pushing them thus has exercise a generating activity of income in order to face the need of household. The disinterestedness of the young to the merchandising of the PFNL, they are attracted more by other sector of activity, public function, the

private establishments, the trade of some products as the sale of meat, the conduct of the cars, restoring.

The conduct of a commercial activity recommends to the one that exercises it to know lira and to write. These two expertise's are primordial for the sale. Holding of counts them, the popularization of the management techniques, of others technical expertise (conservation, storage, etc.). The rate of schooling of the sellers investigated is of 100%. The sellers of 'Ntinia' having a secondary level (college, high school) are the more represented either 70, 37% (picture 4). The two categories the less represented in this trade are the one of seller having a primary level (16, 67%) and academic (1, 85%).

Picture 4 Distribution of the sellers according to the level of instruction.

Level of instruction	Strengths	Frequency %
Primary	9	16,67
College	27	50,0
High school	11	20,37
University	1	1,85
Total	54	100,00

The investigation achieved by the sellers of 'Ntinia' revealed that 62,96% of the sellers live in a household of 4 to 5 people, those that live in a household of less than 3 people represent 25,93%, on the other hand the households superior to six (6) people represent 11,11% (picture 5).

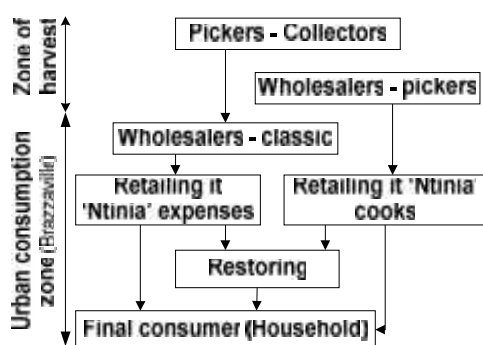
Picture 5 Distribution of the sellers according to the size of the household.

Size of the household	Strengths	Frequency (%)
3 peoples	14	25,93
4 – 5 peoples	34	62,96
6 peoples	6	11,11
Total	54	100

The professional experience is an indicator of the satisfaction of a generating activity of income. The fact to exercise an activity during more of three years testifies the importance of this one. The investigation to reveal that 55, 55% of the sellers have an experience of more than 3 years in the trade of the 'Ntinia' (picture 6). However, 44, 44% of the sellers affirm to have an experience of less than 4 years.

Picture 6 Distribution of the sellers according to the experience in the sale of the 'Ntinia'.

Year of experience	Strengths	Frequency
< 3 years	24	44,44
4 – 5 years	23	42,59
> 6years	7	12,96
Total	54	100



Face 2 Circuits of merchandising of the 'Ntinia'

Being about the satisfaction of the sellers for the sale of the 'Ntinia' takes advantage of the sale is 98, 15%. Indeed, the incomes descended of the sale of the 'Ntinia' allow these sellers whose activity is main for the some and secondary activity for the other, to face the need domestic and personal of the household (food, health, schooling of the children, etc.).

Description of the Circuits of Merchandising of the Ntinia

The interviews with the sellers of the 'Ntinia' permitted to describe the circuits of distributions of the 'Ntinia' since the zone of harvest until the final consumption (Face 2).

The analysis of the merchandising circuits shows the existence of 05 main actors implied in the distribution of the 'Ntinia', it is about recolteurs, of the wholesalers (wholesaler's recolteurs, wholesalers classic) of the retailers.

The zones of the harvests of the 'Ntinia' sold to Brazzaville are the departments of the trays (Djambalas and vicinity) and of the pool (Louingui, Kindamba, Maty, etc.)

According to the tradesmen investigated the big part of the 'Ntinia' in Brazzaville comes of the locality of Maty situated in the north of the Pool. The market of big where achieves itself most commercial transactions between wholesalers and the details are the market of Texaco, receiving the *Dioscorea liebrechtsiana* Of Wild "Ntinia" from the north Pool (Maty) and of the trays.

To the level of the markets of the details, the 'Ntinia' is presented under two shapes: the cool 'Ntinia' non cooks and the 'Ntinia' cooks. He/it is existed of the retailers who sell shapes of 'Ntinia' (cooks and no cooks), however, it is important to underline that the itinerant or stationary retailers who are specialized in the sale of the 'Ntinia' cooked exist.

The analysis of the circuits of merchandising of the 'Ntinia' shows the absence of the direct circuits and the presence of a short circuit (wholesalers recolteurs - Retailing - consumer) and several long circuits (2 to three mediators), the 'Ntinia' bought by most households in Brazzaville comes of the long circuits from where the price raised of the heaps of the consumption 500 FCFA and 1000 FCFA in relation to the budget.

Food Availability of the Ntinia on the Walks

The analysis of the results of investigations by the sellers permitted to confirm that the *Dioscorea liebrechtsiana* Of Wild "Ntinia" is a seasonal food PFNL. The period of apparition within the markets of Brazzaville is consisted between September and February of the peak of the food availability of this PFNL is noted during the months of October and November. During the months of January and February, the availability of the product on the market becomes rare what allows most sellers to move again toward the sale products (safou, mangoes, caterpillars, etc.).

Picture 7 Period of apparition of the 'Ntinia' on the market

N°	Feature	Period
01	Period of the food availability Of the 'Ntinia' within the markets.	September -February
02	period of disappearance of the 'Ntinia' on the market	March - August

From end February and beginning March in the zones of harvest of the 'Ntinia' produces it becomes more and more

rare, the provision of the 'Ntinia' within the markets becomes more and more rare, pushing the actors of the path of the *Dioscorea* (récolteurs, sellers, etc.) to turn around other activities circa generating of incomes.

During the period of the food availability of the 'Ntinia' on the markets, this PFNL is sold in details while presenting to the consumers 3 types of heap (Heap of 250 FCFA, 500FCFA and 1000FCFA).

Being about the satisfaction of the sellers for the sale of the 'Ntinia' during his/her/its period of food availability 98, 15% of the sellers investigated affirm to take advantage of the sale of the 'Ntinia'.

Indeed, the incomes descended of the sale of the 'Ntinia' allow these sellers whose activity is main for the some and secondary activity for the other, to face the domestic and personal needs of the households (food, health, education of the children, etc.).

Technique of Conservation and Problems of the Merchandising of The Ntinia

The sellers of the 'Ntinia' in Brazzaville make resort to several techniques of conservation. During the investigation we could count 7 techniques, it is about the exhibition to the air free of the 'Ntinia' of the packing on the bags in polyethylene (Nguiri) exhibition under the shade packing on the leaves of *marantacées*, packing on a tablecloth (sachet) packing of the leaves of " Ntundu " *Aframomum citratum* (face 3), packing on palms. All these techniques don't permit to keep the 'Ntinia' beyond one week.

According to the sellers of 'Ntinia', two main problems are met fluently in the trade of the 'Ntinia' in Brazzaville, it is on the one hand on the other hand about the storage and the conservation of the 'Ntinia' at the origin of the losses of the transportation of the product of the place of harvest (or collection) toward the urban markets.



Face 3 mode of conservation of the 'Ntinia' by the sellers to the total market of Brazzaville.

DISCUSSION

Profile of the sellers

The analysis of the results of the investigation of the merchandising of the 'Ntinia' permitted to describe the profile of the sellers.

The trade of the 'Ntinia' in Brazzaville is dominated by the women, 87, 04% against 12, 96% of men. These last are essentially met in the trade of big. Our results permit to confirm those gotten by Mialoundama (1996) and Chabot (2002) that shows that the leaves of *Gnetum* are picked

exclusively by the women while the men are in charge of walk them until the principals centers of merchandising where the women intervene again for the retail trade in the markets.

These results go in the same sense that those gotten by Boukoulou and Mbete (2010) on the walnut of cola in Congo. In Cameroon, Chad and Ndoye Osseynou (2006) note also that the women are implied more in the merchandising of the PFNL.

Working on the analysis of the aspects socio - economic of the PFNL in Africa central Noubissie and *al.*, (2008), watch that the men are interested in the products that have a big economic value, whereas the women are oriented mainly toward the products consumed to the level of the households. They are implied strongly in the trade of detail. This strong implication of the women in the merchandising of the PFNL goes in the same sense of the results gotten on the merchandising of the corn, of the potato of the market products in Brazzaville (Berton-Ofouemé, 2005; Bissabiki, 2014; Tchoundaga, 2015).

The similar results have also been gotten in Kinshasa in the trade of the banana plantain (Bifubiamboté Salambiaku, 2009).

The trade of the 'Ntinia' in Brazzaville interests people of all ages confounded with a dominance of the sellers of more than 30 years, either 87,14% This report goes in the same sense that those found by Bissabiki (2014) that notes 85% of sellers of corn aged of more than 30 years. Tchoundaga (2015) also gets similar results while noting 89% of the potato sellers aged of more than 30 years. The similar results have also been returned by Bifubiambote Salambiaku (2009) on the trade of the banana plantain that implied 82% of the aged sellers of more than 30 years.

The merchandising of the PFNL is a generating activity of the incomes, although experienced majoritairement in the casual sector. She/it assures to the population the conditions of subsistence and improves their setting of life while bringing some incomes meaningful to the households (Nguimbi, 2002). The survey on the trade of the 'Ntinia' in Brazzaville revealed that the sellers imply are schooled, with 72, 22% of the sellers that have to the minimum in the level college.

The sellers having been at the university are represented these results weakly are similar to those gotten by Bifubiamboté Salambiaku (2009) and Tchoundaga (2015). The sale of the 'Ntinia' during his/her/its period of food availability has a socio-economic impact on the households of the sellers implied.

Our results showed that 68, 52% of the sellers are unmarried, they face the daily needs of their households. Those that live in couples represent 18, 52%. These results are contrary to those gotten by Tchoundaga (2009) and Bifumbiabote Salambiaku (2009) that notes rather a rate more raised of the sellers living in couple, either 63% for the 1st author and 71, 9% for the second.

Circuits of Merchandising

The analysis of the circuits of merchandising of the 'Ntinia' puts in inscription several actors implied to different stage, it is mainly about the pickers - collectors, the wholesalers, the retailers person responsible of the restaurants, etc. these results are similar to those gotten leave several authors at the

time of the analysis of the circuits of merchandising of the food products (Loubelo and Mialoundama, 2002.; Chabot, 2002.; Ofoueme Berton, 2005; Boukoulou and Mbete, 2010;).

Food Availability and Importance of The Domestication

In farming environment, the picking is an activity practiced all along the year, with more favorable periods, in this case the period of the first season of rains (March to June) and of the second season of rains (September to November). These two seasons are not considered like very favorable to the picking of the 'ntinia', of the fact notably of the presence in the forest or in the savanna of an a lot more varied range of the products non woody forester (Boukoulou and Mbéte, 2010). According to Mialoundama and al (2008); the availability of the PFNL is appreciated at the scene in relation to their presence of sales, in the markets or in the places of landing of the vehicles from the zones of picking. Some PFNL are all year round present, whereas others are seasonal. Among the PFNL whose availability is yearly is the PFNL leaves (*Gnetum*, *Trilepsinium madagascariense* and of the *marantacées*), the PFNL stems (*rattans and lianas*); these PFNL are all year round availabilities in the forests and are picked regularly and marketed in a permanent way in the different markets farming and urban (Mialoundamas and al, 2006, Mialoundamas and al; 2008, Loubelo, 2012).

However, the PFNL seasonal worker who is available in the zones of picking also exists, and on the market to very determined periods of the year. The works ménés by Mialoundama and al (2006) showed that the *Dacryodes edulis* and the *Grewia coriacea* are two PFNL fruit that is available on the market to some periods of the year. The *Dacryodes edulis* is available between December and April whereas the availability of the *Grewia coriacea* on the markets is from July to October. Our results gotten on the 'Ntinia' allow to confirm the existence of the PFNL seasonal worker in Congo. Indeed, the 'Ntinia' is available on the markets during the period of September to February. However the months of March to August, the 'Ntinia' disappears in the zone of picking. At the end the month of August and the beginning of the month of September, at the time of the operations of soil preparation, notably the burnt land and the apparition of first rain encourage the spontaneous regeneration of the 'Ntinia' in the zones of pickings; what permits to throw back the path of the 'Ntinia' until the month of February. Since the month of January, one attends the slowing of the picking of the 'Ntinia' that is called to disappear in March. The period where the food availability of the 'Ntinia' is important on the market corresponds in the month of November and December, period being part of the small season of rains. The 'Ntinia' path created many jobs in the zones of collections but also in zones them of urban consumption. These jobs are seasonal and correspond to the period of the food availability of the 'Ntinia'.

During this period, the sale of the 'Ntinia' in republic of Congo has a meaningful impact on the life of the households implied, 98,15% of the sellers investigated find satisfaction of this trade, in spite of forced them (conservation and storage) to surmount. The young shoots of 'Ntinia' are used as vegetables and are the subject of a remunerative enough trade (Mambou, 2004). The importance socio economic of the 'Ntinia' and his/her/its demand by the consumers pleads in favor of a domestication of this PFNL and the improvement of the techniques of conservations and storage, in order to

make he available during all year round. Works on the in vitro culture from the méristèmes have been achieved in Congo by Mambou (1998 and 2004), he/it is evident from these works that the weaned vitro plantations adjust relatively well in the natural habitat. Currently works of relative research to the conditions for the domestication are under realization.

CONCLUSION AND PERSPECTIVE

The actors implied in the sale of the 'Ntinia', take advantage of this PFNL, the studies on the consumption in the households revealed that the 'Ntinia' would seem to have therapeutic virtues. Some future studies must be dedicated on the nourishing value as well as on his/her/its domestication, so that this vegetable leaf is all year round available. The valorization of this vegetable that is known on the whole of the households will be able to contribute to the struggle against the big nutritional pathology (obesity, diabetes, cancer, malnutrition, etc.).

Bibliography

- Biloso M.A, 2003. Contribution to the survey of provision and distribution of the products of hunt and picking in the city of Kinshasa in R.D.C, DESS an Inter academic in Management of the animal and plant resources in tropical surroundings, were AG (Belgium) unpublished, 53 p.
- Biloso M.A, 2008. Valorization of the non woody forest products of the Batéké tray perished some of Kinshasa in R.D.C, Thesis of Doctorate, ULB, Brussels, 252 p,
- Boukoulou H. and MBETE P., 2010. Social role of the walnut of cola in Congo: consideration on the uses and the distribution of the *Nitida Cola* in Brazzaville, Annals of the university Marien Ngouabi,; Letters and Liberal arts ISS NS: 18 15 - 44 33, 11 (1):1-14.
- Bissabiki S. O., 2014. Contribution to the analysis socio economic of the merchandising of the corn in Brazzaville. Memory in view of the obtaining of the License diploma in sciences agronomic forest and environment, Superior National School of agronomy and Foresterie, University Marien Ngouabi, 45 p.
- Bifubiambote Salambiaku G, 2009. Contribution to the analysis of the profitability in the trade banana plantain in city of Kinshasa. UNIKIN, memory for the obtaining of the engineer Agronomy diploma, Unikin, 34 p.
- Chabot, 2002. The path of the non woody forest products in GABON ". *The Flaming*, 55:40-42.
- Fao, 1999. "The Fao and the foresterie: toward a definition harmonized of the Fortier products non woody" Rome.
- Frederic L., 2002. The contribution of the non woody forest products to the economy of the households of the region of Thiès, to Senegal, University Laval, 2eme shop of work, BAMAKO,
- Loubelo E, and Mialoundama F, 2002. Organization of merchandising and advantage socioeconomic of the *Gnetum* (KOKO). *Annals of the university free of Congo*; set TO, 1, (5): 1-75.
- Loubelo E. 2012. Impact of the non woody forest products (PFNL). On the economy of the households and al food security: case of republic of Congo: Thesis university of Rennes 2, 260 p.
- Mbemba F, Loubelo A.B, Mialoundama Bakouetila G.,F., Bouhika E.J, Moussouami S.I, Bamokina Belolo J.I,

- Mboungou Z. 2016. Consumption of the stems leaves of *Dioscorea liebrechtsiana* Of Wild "Ntinia" in the households of Brazzaville (Congo). *Newspaper Applied of Biosciences* 104: 9985 - 9991 ISSN 1997 - 5902.
- Mialoundama F, 1996. "Nutritional and Socioeconomic interest of the *Gnetum* kind in Africa central" In 1, food in tropical drill: BIO INTERACTION - cultural and perspective of development (volume /: resources food production and consumption). CM HS ladiik, AHLadik, Péguez, HS, Linares of and fromert IN Edit° Unesco bets. Chap. 15: 221-227.
- Mialoundama F, 2002. Influence of the leaves on the vegetative multiplication by bouturage at *Gnetum africanum*. Welw. *Annals of the university Free of Congo*. B set, 1:154 -163.
- Mialoundama F., Nsika - Mikoko E., Attibayeba, 2006. Potential of the non woody forest products (PFNL) working of the present paths and legal context in the Congo Brazzaville. Report of FAO survey, Brazzaville, 87 p.
- Mialoundama F., Nsika - Mikoko E., Attibayeba, 2008. Analysis of the impact socio economic of main non woody forest products (PFNL) on the economy of the households and the National economy in Republic of Congo. PR. N° 35723, 79 p.
- Mambou J.C, 1998. In vitro regeneration of the yam (*Dioscorea sp*). Memory of farming development engineer. IDR, University Marien Ngouabi, Brazzaville, 31 p.
- Mambou J.C, 2004. In vitro regeneration of the *Dioscorea liebrechtsiana* Of Wild "Ntinia" Memory DEA, faculty of the sciences of Brazzaville, 52 p.
- Mukerji A.k, 1995. Special memory on the importance of the non woody forest products and the strategies of lasting development. *Non woody forest products* (15): 225 - 237
- Nkounkou J.S. 1993. The section Enantiophyllum uline of the *Dioscorea* kind in Africa Centrale. *Joun, Club*. 126 (1): 45 - 70
- Ndoye Oh, Ruiz Perez M, Eyebe To, 1998. No - wood forest products markets and potential deterioration of the forest resource in central Africa: The role of research in providing has balance between welfare improvement and forest conservation. Outcome of international Expert Meeting or non wood - forest products in central Africa, limb Botanicals Garden, Cameroon.
- Noubissie E, Tieguhong J.C and Ousseynon Ndoye, 2008. Analysis of the aspects socio - economic of the non woody forest products (PFNL) in Africa power station Federal Ministry for the food agriculture and the protection of the consumers: Commission of the forests of central Africa, organization of the nations united for the food and agriculture (FAO).
- Nguimbi, 2002. Survey of feasibility on the non woody forest products of plant origin in Gabon, IRAF institute of agronomic and forest research, Libreville June 2002, 100 p.
- Berton - Ofoueme Y., 2005. The market cultures and the cultures of slot in the big cities of central and western Africa. *Annals of the University Marien Ngouabi* 6 (1): 18-28.
- Ruiz - Perez M, Ndoye Oh, Eyebe To, Pondodewo TO, 2000. Spatial characterization of non timber products market in the humid forest zones Cameroon of. *International Forest Review* 2 (2): 71 - 83.
- Tchoundaga H. D, 2015. Contribution to the analysis socio economic of the potato merchandising in Brazzaville. Memory in view of the obtaining of the diploma of licenses in sciences agronomic forests and environment, Superior National School of agronomy and Foresterie, University Marien Ngouabi, 45 p.
