



# An Analysis of Household Consumers' Awareness, Perceptions, Attitudes and Behaviour Towards Irish Potato Procurement and Consumption in Urban Areas in Cameroon

**Nyingchia Yvette** (Corresponding Author)

Institute of Agricultural Research of Development (IRAD) Nkolbisson, P.O. Box 2123 Yaoundé, Cameroon

Email: [nyingchiav@yahoo.com](mailto:nyingchiav@yahoo.com)

**Mveme Olougou Mireille Michée**

University of Ngaoundéré, P.O. Box 456 Ngaoundéré, Cameroon

**Adama Farida**

Institute of Agricultural Research of Development (IRAD) Nkolbisson, P.O. Box 2123 Yaoundé, Cameroon

**Nso'ngang Andre**

Institute of Agricultural Research of Development (IRAD) Nkolbisson, P.O. Box 2123 Yaoundé, Cameroon

**Dickmi Vaillam Claudette**

Institute of Agricultural Research of Development (IRAD) Nkolbisson, P.O. Box 2123 Yaoundé, Cameroon

**Nossi Eric Joel**

Institute of Agricultural Research of Development (IRAD) Nkolbisson, P.O. Box 2123 Yaoundé, Cameroon

**Simo Brice**

Institute of Agricultural Research of Development (IRAD) Nkolbisson, P.O. Box 2123 Yaoundé, Cameroon

**Okolle Justine**

Institute of Agricultural Research of Development (IRAD) Nkolbisson, P.O. Box 2123 Yaoundé, Cameroon

**Tata Ngame Precillia**

Institute of Agricultural Research of Development (IRAD) Nkolbisson, P.O. Box 2123 Yaoundé, Cameroon

## Article History

**Received:** 1 June, 2021

**Revised:** 25 June, 2021

**Accepted:** 7 July, 2021

**Published:** 11 July, 2021

Copyright © 2021 ARPG  
& Author

This work is licensed  
under the Creative  
Commons Attribution  
International



CC  
BY: [Creative Commons  
Attribution License 4.0](https://creativecommons.org/licenses/by/4.0/)

## Abstract

The aim of this study was to measure the effects of townspeople's origin and acculturation on Irish potato procurement and consumption in Cameroon. It is part of the logic of developing strategies for the introduction and diversification of urban dietary practices, to reduce hunger and undernourishment in urban areas. The study plans to discover new dishes and make them culturally and traditionally acceptable following local tastes and preferences. To provide a snapshot of Irish potato city dwellers' consumers' characteristics, the study used a cross-sectional design. The cross-sectional sample is made up of 180 subjects, taken in each of the 12 associations; aged at least 10 years, of people, originated from Irish potato-producing areas or non, chosen in Yaoundé city, i.e. 6 associations per category. They must have spent at least 2 years in the association, that is to say, that they have experience of urban life and have stabilized their food supply mode. The main idea was that subjects from producing areas are consumers of Irish potato, following traditional food consumption patterns and concepts of food availability, while those from non-producing areas are consumers who progressively integrate and adopt potato dishes into their diets through the impact of acculturation and exposure. The first was chosen according to the sociocultural factors determining the nature of the traditional food intake in the production areas. All regions in which Irish potato was not produced were considered as non-producing areas. Results show that the predisposition of traditional food systems and preferences lead city dwellers to consume specific foods in particular ways; all the people interviewed consume Irish potato, but not at the same rate; Irish potato dishes vary and people from non-producing areas already eat some dishes like fried potato and chips at high scale. Intercultural associations could thus be an important channel for sharing Irish potato consumption information.

**Keywords:** Potato consumption; Urban households; Households from potato producing and non-producing areas; Food security.

## 1. Introduction

Food insecurity and undernourishment can be caused by the unavailability of food, insufficient purchasing power, inappropriate distribution, or inadequate use of food at the household level [1] and is rampant in Sub Saharan Africa in general and Cameroon in particular. In Cameroon, there is a tribal distribution of staple and other foods and the dietary diversification index is very low, as starchy foods provide almost three quarters of the total energy supply [2]. A study on determinants of urban plantain consumption in Cameroon showed that there are many different ways of cooking plantains due to many ethnic groups with diversification ideas for each recipe, [3]. The predisposition of

traditional food systems and preferences as well as the lack of food that is culturally acceptable, affordable, and nutritious can lead to hunger and undernourishment in the case that a population do not have access to the food that is traditionally known and acceptable [4]. Changing people's behaviours on food depend on how food is accessed, cooked and consumed at household level [3]. Thus, an important step to reduce hunger and undernourishment in poor regions will be to seek strategies of introducing and diversifying the dietary practices of these people. One way will be to discover new foods and make them culturally and traditionally acceptable following local tastes and preferences. Thus, a study is designed to measure the effects of peoples' origin and acculturation on Irish potato procurement and consumption in urban areas of Cameroon: case of Yaoundé city.

In this context, Irish potato (*Solanum tuberosum*) can play an important role. Potato has a high nutritive value and the ratio of protein to carbohydrates is higher than that of most other food crops [5]. It is used for human consumption, animal feed, and as a source of starch and alcohol [6]. This crop is currently grown at a significant scale in more than 130 countries including Cameroon, covering about 18 million hectares [7]. The yearly production of potato amounts to 295 million tons accounting for about half the yearly world production of roots and tubers, one third of which is from developing countries. As a short season, high-value crop, its production in Africa nearly tripled over the past 35 years, from 1.3 million tons in the early 1960s to 3.7 million tons in 1996 [8]. Since 2000, imports of raw and processed potato have risen from less than 9,000 tons to 40,000 tons a year [9]. To increase production, several research studies has been carried out on the adaptability of various potato varieties to different agro-ecological zones and pathological conditions in Cameroon. In the country's highland areas – the main production basins (North West, West, Adamawa, and Far North), close to ten potato varieties can be produced all year-round.

Potato is becoming an important agricultural commodity with an annual production of over 250,000 tons, grown on about 70,000 ha in Cameroon [10]. Of recent, major projects like PNDRT, GIC, C2D/IRAD have focus on boosting Irish potato production by selecting, multiplying and /or importing many tons of seeds [11]. During 2014 – 2017, C2D/IRAD potato project multiplied and distributed 110 tons of potato seeds of improved and local varieties [2]. The GIZ ProCISA project donated 24 tons of Class E potato basic seeds to seed multipliers in the West, Nord-West and Adamaoua regions. Further 30 tons of class A basic seeds of the varieties JELLY, MARABEL, BAVAPOM, SEVIM, KRONE and JUWEL all imported from Germany, were distributed to seed multipliers in Cameroon [10]. During this same period, the Ministry of Agriculture and Rural Development (MINADER) donated 150 tons of Mondiale and Panamera potato seeds imported from Holland to farmers in these main production basins [12]. All these donations were in a bit to increase food base and reduce famine and poverty. Cameroon's urban areas especially the city capital of Yaounde are rapidly growing and there is need to stimulate the intake of new foods. With this new push on production, potato therefore, can play an important role in the national food and nutritional security, poverty alleviation, income generation and can provide employment. However, culinary procedures related to potato preparation are limited and some people simply stick to their traditional taste and preferences. A number of research studies have already been conducted regarding household issues related to Irish potato consumption [13]. Although potato is consumed by households in producing areas in various forms, for houses from non-producing areas, potato dishes are unusual in their dietary patterns [9].

Also, when people change locality, their dietary patterns are modified by their new environment and interaction with other people. Exposure and acculturation has been noted to have both beneficial and deleterious changes in dietary habits, especially among groups living in urban areas [1]. This has been greatly analysed in the case of dietary habits and food intake patterns in the USA [14].

Urban Cameroon like most African cities are undergoing a “nutrition transition” in which people tend to consume foods that originate from other places [1]. Thus, as a means to curb down urban food insecurity, it is necessary to identify strategies of introducing and diversifying the dietary practices of Cameroonians especially those in urban areas who may not have access to other traditional foods [3]. Contemporary researchers are urging us to analyse factors that will motivate urban household to increase the intake of irish potato in order to make suggestions on ways of incorporating Irish potato dishes into the dietary base of people from all regions and cultural groups in Cameroon. This study will also identify sources of Irish potato acquisition for urban dwellers as well as their main irish potatoes meal prepared and preferred. This will help to increase production and valorise research activities

## 2. Methodology

### 2.1. Study Sites

This study was conducted in Yaounde, the capital city of Cameroon which is a cosmopolitan city with people from all parts of Cameroon. It is located on latitude 3.87°N and longitude 11.52°E and is situated at 726 m above sea level. It has an area of 180 km<sup>2</sup> and a population of approximately 2.5 million as of the 2010 census making it the biggest city in the centre region and the second largest city in the country. It has tropical climate and four seasons: two rainy and two dry seasons in a year. Relative humidity can be as high as 95%. The land is made up of predominantly tropical soil. Yaounde economy is centred on the administrative structure of the civil service and the diplomatic services. Yaounde was chosen due to these high-profile central structures and the relatively higher standard of living and security compared to the other regions of Cameroon.

## 2.2. Study Design

The study used a cross sectional design [15] since it was aimed at providing a snapshot of characteristics of city dwellers regarding Irish potato use for household food consumption. This design was preferred because it was appropriate in answering the research topic and was more affordable, as data was only collected at one point in time. The cross-sectional sample was drawn from urban households living in Yaounde but originating from Irish potato producing and non-producing areas in Cameroon. The main idea was that those from producing areas will naturally be consumers of Irish potato following tradition food consumption patterns and food availability concepts while those from non-producing areas will be new consumers and therefore will be adopting potato dishes into their diets through the impact of acculturation and exposure. Six samples were established for households from Irish potato producing areas taking into account sociocultural factors (ethnic groups, main traditional meals and ways of using Irish potato locally) that determine the nature of tradition food intake of these areas. All the other regions in which Irish potato was not produced were considered non-producing areas (Table 1).

Village meetings were the main units of identifying households for data collection wherein in each case, a meeting was identified and 15 members were elected randomly. The social status of the elected members was considered; they were selected from across the social profiles. As well, we considered only village associations that were at least 10 years old since their creation. Also, members to be interviewed were those who have stayed in the association for at least two years meaning that they had experience with urban life and had stabilized their livelihoods and especially food procurement patterns. Descriptive statistics were used to analyze data. Results were presented on tables and graphs.

Table-1. Household sampling design

Origin	Name of the Associations	Region in Cameroon	Age of association	Total number of membership	No of households selected for the interviewed
Origin from Producing areas	ADJEMA	Adamawa	25 years	105	15
	Le Mayo-Tsanaga	Far North	20 years	109	15
	Femme Solidaire du Grand Noun	West	35 years	205	15
	Neighbours (Wum)	Northwest	18years	204	15
	Femme Entreprenante	West	22 years	304	15
	Akum Welfare Association	Northwest	30 years	305	15
Origin from Non-producing areas	REMARE	North	35 years	208	15
	Solidarité Sans Frontière	South	18 years	130	15
	Union des Femmes Chretienne Briquetterie	Centre	40 years	150	15
	Nkulnam	Littoral	25 years	50	15
	CAEBRI	East	15 years	65	15
	Ebamut Family Meeting	Southwest	16 years	89	15
	Total				180

## 2.3. Household Sampling Procedure

Generally, people that originate from various parts of Cameroon while out of their villages often group themselves into meetings and association. These social groups help people to continue to feel and share their cultural believes and meet people from their area even when out of the villages. This study used such settings for data collection. Therefore, meetings were the main units of identifying households for data collection.

A multistage sampling technique [16] was used to gather information from 180 households (Table 1) with the use of a structured questionnaire. The first stage was the purposive selection of Yaounde due to the availability of diverse groups of people. It was further used to select the various groups from which households were drawn for the interview so as to get representative groups from all the regions concerned. The second stage employed the use of systematic random sampling technique [16] to select 15 households each from each association or meeting (Table 1).

## 2.4. Data Collection

The primary data from the sampled households were collected through formal survey by using a structured questionnaire. The questionnaire was pre-tested before the main survey to check the relevance of questions and to determine whether it was comprehensive enough to collect the required information. The information collected included household general characteristics, household source of income, and Irish potato consumption including quantity consumed, sources of Irish potato and price per unit, different methods of cooking Irish potato and problems faced with Irish potato storage, processing and consumption as well as proposed solutions. The researchers did the interviews and provided guidance and technical support during the exercise. Field errors were corrected while in the field and data completeness was checked on a daily basis on all the questionnaires that were submitted by the various

researchers from the field. Field notes were also taken during the interview process so as to enable us complete statistics obtained through the questionnaires. Published and unpublished research works, textbooks and articles made up sources of secondary data obtained through the IRAD library and other online sources.

Descriptive statistics were used to analyse data. This included the use of frequency tables, percentages and means of distributions. Word verbatim reporting was done on information obtained from some households on striking issues like the procurement of Irish potato and styles of utilisation. Citations were used to report on types of Irish potato meals prepared and preferred by households in producing and non-producing areas. Results were presented on tables and graphs.

### 3. Results and Discussion

The main production basins of Irish potato in Cameroon are the North West, West, Adamawa, and Far North regions with the Northwest and West regions being the chief areas of production and most culturally diversified. However, people in these chief production areas consume more of cereals with vegetables:- In Banso and Santa-Akum both areas in the NW region, cereals and roots other than Irish potatoes are consumed respectively whereas in the West region, Banana and potatoes are consumed by the Bamileke clan while cereal in the form of maize flour are mostly consumed in the Bamoun clan.

#### 3.1. Socio-Economic Characteristics of Households

Households were selected from all the ten regions of Cameroon following the various socio-cultural settings. In some regions like the Northwest and the West regions, two groups category were considered. Each category of household captured specific socio-cultural backgrounds that when summed together, a full representation of Cameroon could be observed in the working sample. Specific socio-economic characteristics of households are presented on [Table 2](#).

**Table-2.** Socio-economic variables on households

Variables		Origins from producing areas	Origins from non-producing areas
Quantitative data (mean $\pm$ standard deviation)	Age	37.2 $\pm$ 13.4	35.7 $\pm$ 10.2
	Household size	5 $\pm$ 3	6 $\pm$ 4
	Number of years resident in the urban centre	13.4 $\pm$ 11.6	13.5 $\pm$ 9.2
	Annual revenue (FCFA)	157777.8 $\pm$ 93663.5	187944.4 $\pm$ 108537.9
Sex (%)	Female	78.9	70.0
	Male	21.1	30.0
Marital status (%)	Living together	1.1	1.1
	Single	23.3	27.8
	Married	58.9	67.8
	Separated/divorced	6.7	1.1
	Widow/Widower	10.0	2.2
Educational level (%)	Muslim education	0.0	5.6
	No formal education	11.1	1.1
	Training school	0.0	2.2
	Primary Education	7.8	11.1
	Secondary Education	18.9	17.8
	High school	24.4	16.7
	University Education	37.8	45.6

[Table 2](#) shows that the average age of respondents was 37 years for households from producing areas and 35 years for households from non-producing areas. Those from producing areas had an average of 5 persons in their households while those from non-producing areas had larger household sizes with an average of six persons per household. In both cases, the households had been resident in Yaounde for at least 13 years with average resident period being 13.4 years for households from producing zones and 13.5 years for households from non-producing zones. This indicates that the households have similar backgrounds of living in the city and provides a higher chance of recording information that was homogenous for households from producing and non-producing areas. Regarding the gender of respondents, they were 78.9% and 70.0% of female for origins from producing and non-producing areas respectively while males were 21.1% and 30.0% respectively. The marital status was dominated by single 23.3% and 27.8% and married 58.9% and 67.8% for producing and non-producing households respectively.

Respondents had a reasonable educational level. Although all respondents were found to have all levels of education, the majority had attained university level (37.8% and 45.6%) and at least secondary education (43.3% and 34.5%) for origins from producing and non-producing areas respectively. This shows that people with a higher educational level had a higher chance or urge of travelling probably due to job search or due to occupational calls through transfers. Thus could easily accept dietary changes.

### 3.2. Irish Potato Procurement Mechanisms

Irish potatoes mechanisms (such as ownership of farm, frequency of purchase, type of purchase, place of purchase and potatoes as gift), to people from producing and non-producing areas were analysed and illustrated in Figure 1. Results showed that majority of people in both areas did not possess a farm. Nevertheless, of those who possessed one, 7.8% came from producing areas as against 2.2% from non-producing areas. This indicates that even in urban areas some households from producing areas have continued to maintain their culture of Irish potato cultivation and rely on these farms as their main source of Irish potato acquisition. On their part, it was interesting to notice that some households from non-producing areas were already getting engaged in Irish potato cultivation meaning that they were highly acculturated and have now found ways of cultivating Irish potato. Most of these farms were found in the villages of origin of these households and these were for households from the West region. This could be associated to their proximity to Yaounde where the study was carried out. This shows that some households have continued to cultivate potato even when they are in the city. A testimony from a 43-year old Bamoun (producing area) man in the Mfoundi neighbourhood goes thus:

*My children go to the village every vacation to do farming, interact with other family members and learn our culture. Most food stuff especially Irish potato are very expensive here in the city so I do everything never to buy potato. Our land is very fertile and we grow many crops at no cost. Moreover, my potato are bio since I do not use toxic chemicals during their cultivation. When I harvest, I sometimes have up to fifteen 15L-buckets and even more. After I reserve the stock for my family consumption, I share or sell the rest. My wife also likes this idea and when she is chanced, she accompanies the children to the village.*

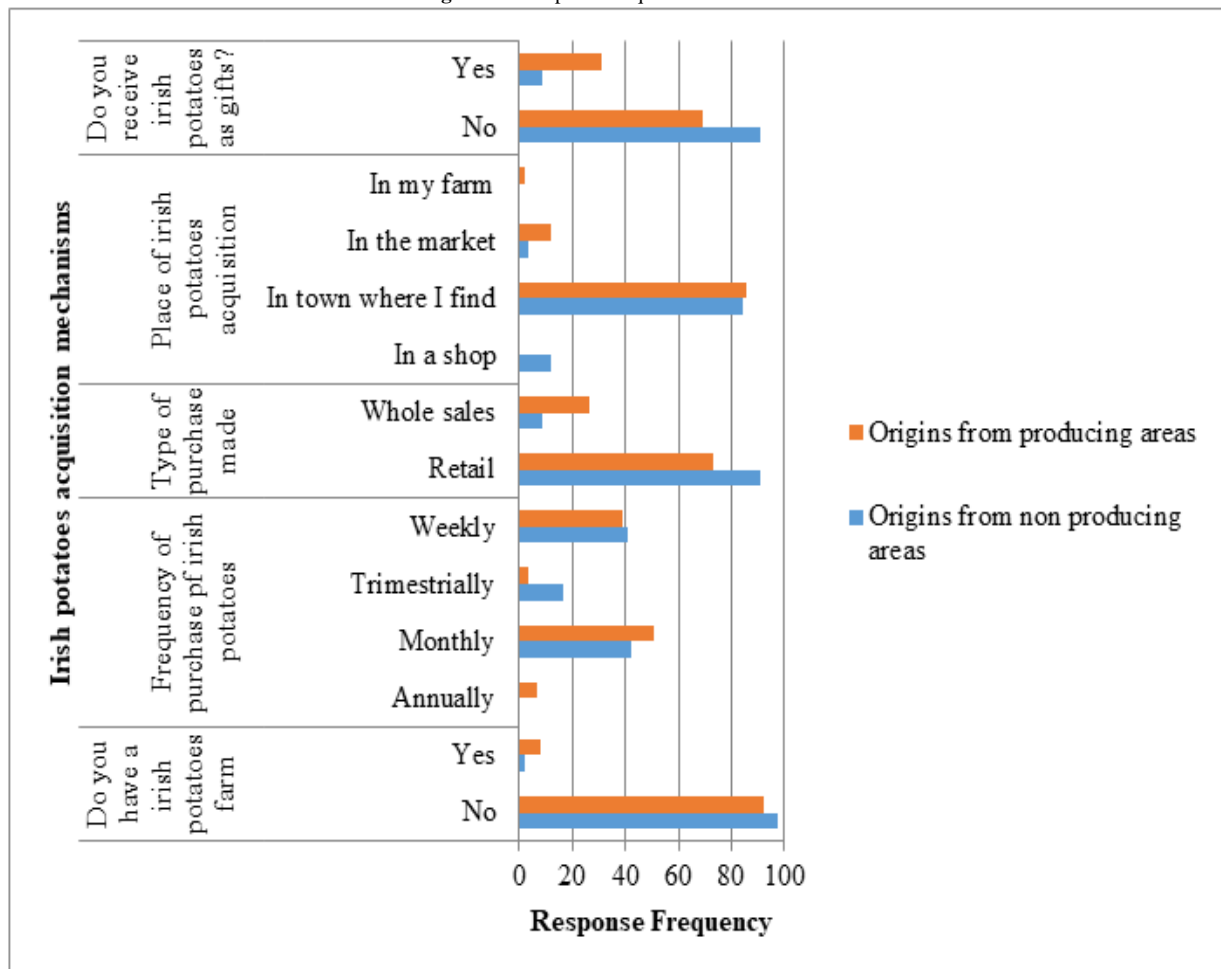
The second means of acquisition is through purchasing on spot (cash markets). Generally, more than 90% of households acknowledged that they purchase Irish potato from the urban market. The frequency of purchase varied from weekly to annually. More households from non-producing areas (41%) bought potato weekly and those from non-producing areas seldomly bought weekly. The majority of households bought potato monthly; 42.2% for indigenes from non-producing areas and 51.1% for origins from producing areas. This suggests that although households consumed potato, the frequency of purchase varied with the origin of the household. Also, the scale of purchase was analysed and it showed that 91.1% of people originating from non-producing households bought potato on retail with only 73.3% of households from producing areas.

The third means of acquisition was noticed that, many more household (26.7%) from producing areas bought their potato from whole sales as against only 8.9% of households from non-producing areas. Again, this suggests that place of origin influences the procurement of potato and even the means of acquisition (Fig. 1).

The last means of acquisition was through gift in which 91.1% of households from non-producing areas did not receive potato as gift with only 8.9% acknowledging to receive potato as gifts. On the other hand, up to 31% of households from producing areas received potato as gifts in Yaounde while 68.9% did not receive. This can also be interpreted by the fact that people from producing areas still have ties that enable them to gain access to Irish potato in the form of gifts while those from non-producing areas seldom received Irish potato as gift. Field testimony by 36-year old Oku (producing area) woman living in the Mendong neighbourhood states that:

*I always send many food items to the village to my family. In return, each time someone is coming to the city, they will also send me some Irish potato since this is the most common crop grown crop in my village and is very expensive here in town. This makes me to always have Irish potato even though I hardly buy. Even when my stock gets finished, I send money to my mom and she does everything to send me more potato. In this case she buys potato from people who also grow them as she does.*

Figure-1. Irish potato acquisition mechanisms



This population, especially those from producing areas where more versed with distinguishing better varieties of Irish potato. Up to 91.1% of households from producing areas noted that they bought only varieties that they knew of the 62.2% of households from non-producing areas. Whereas some used colour to distinguish these potato, others scraped the flesh to notice whether it was watery or not and the rest simply had special customers from who they bought potato. These methods assured the buyer that the product being purchased was of good quality.

The increasing exposure and acculturation has been noted to have both beneficial and deleterious changes in dietary habits, especially among groups living in urban areas [1]. In the case of this study, it caused a necessary increase in social interaction and transfer of dietary habits across cultures and regions in Cameroon. On food acquisition, while in the cities, people from producing areas still show signs of remaining tight to their traditional food systems by the higher procurement of Irish potato in their households. While household activities provide for partial subsistence, most families are not completely self-sufficient in providing for their Irish potato food needs. Therefore, they combine a range of strategies to satisfy their Irish potato needs like harvesting from their farms, purchasing and receiving as gifts, which are similar means that have been discussed by several authors [17]. Social networks are also important in acquiring Irish potato as many more people from producing areas use these channels. Ngome -Tata, *et al.* [18], demonstrated the use of social relationships and organisations in securing livelihoods for poor people. This study demonstrated that people use family members or go back to their places of origin to obtain potato. The results from this study confirmed the predisposition of tradition food systems and knowledge about foods influences food acquisition mechanisms [19].

### 3.3. Quantity of Irish Potato Procured and Household Preferred Characteristics of Irish Potato Tubers

Generally, households from producing areas procured more Irish potato than those from non-producing areas. An evaluation showed that households from producing areas procured  $31.8 \pm 27.3$  kg per month while those from non-producing areas only procured  $10.8 \pm 8.2$  kg per month. This has been represented in a box plot as on Fig. 2. The measuring units for Irish potato were bags or buckets of different volumes.

Figure-2. Potato use in households of producing and non-producing zones of Cameroon

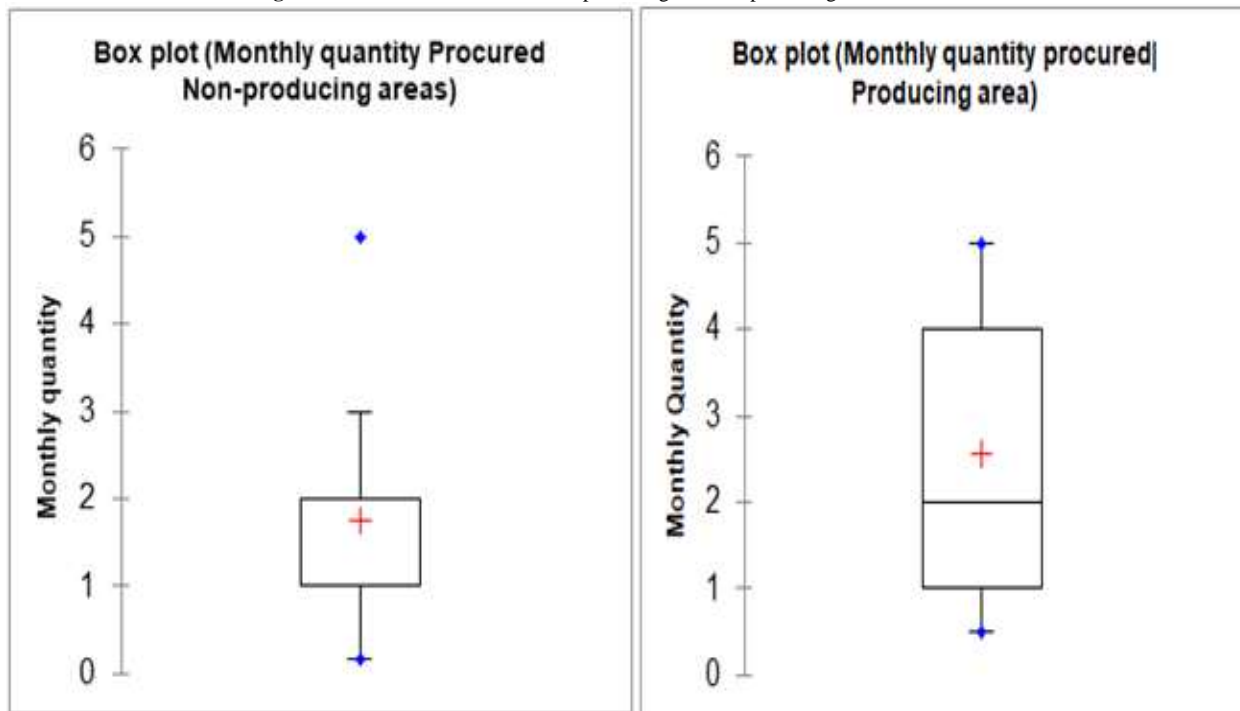


Fig. 2 shows that the use of Irish potato in households in both producing and non-producing zones was not uniform. Households from producing areas procured higher quantities of potato than households from non-producing areas. This means the individual food preferences, knowledge about foods and personal factors were what determined the acquisition and consumption of Irish potato. This tendency was also demonstrated on fruit consumption in forest areas of Cameroon by Tata *et al.*

Individual-reported food preferences and frequencies of food consumption have served as proxy measures of the current diet in consumer research and in nutritional epidemiology studies [14].

The knowledge of household members on certain preferred characteristics of Irish potato tubers was also evaluated in this study. Here, respondents mentioned characteristics like traditional meal, easy digestion, dry and floury, tastes, eating habit and vitamins. Different households perceived these characteristics differently while nutritional value was very important for households from producing areas with 35.6% of households citing this. Eating habits (37.8%) appeared more important to people from consuming areas. These characteristics are presented on Table 3.

Table-3. Preferred characteristics from Irish potato tubers

Modality	Variables	Origins from producing areas	Origins from non-producing areas
Preference with respect to Irish potato (%)	Traditional meal	35.6	4.4
	Easy digestion	2.2	2.2
	Dry and floury	15.6	16.7
	Tastes	5.6	21.1
	Eating habit	0.0	37.8
	Vitamins	41.1	17.8
Household members that consume Irish potato most (%)	Children	12.2	0.0
	Mother	0.0	2.2
	Everybody	87.8	97.8

Table 4 further suggests that for both categories of households, Irish potato was prepared for everybody in the house; 87.8% and 97.8%, respectively for households from producing and non-producing areas. Further to this, 12.2% of households from producing areas demonstrated that Irish potato was consumed by children and a small portion of household from non-producing areas thought it was consumed by women. This analysis suggests that Irish potato meals were cherished by a majority of household member meaning that it is a food that can be easily valorised once the culinary practices are established. It also shows that households from producing areas have an old practice of using potato as children food and therefore even in the city, this practice has continued as could be demonstrated by this citation from a 24-year old mother originating from the Adamawa region, a mother of three children and running a household of 8 people.

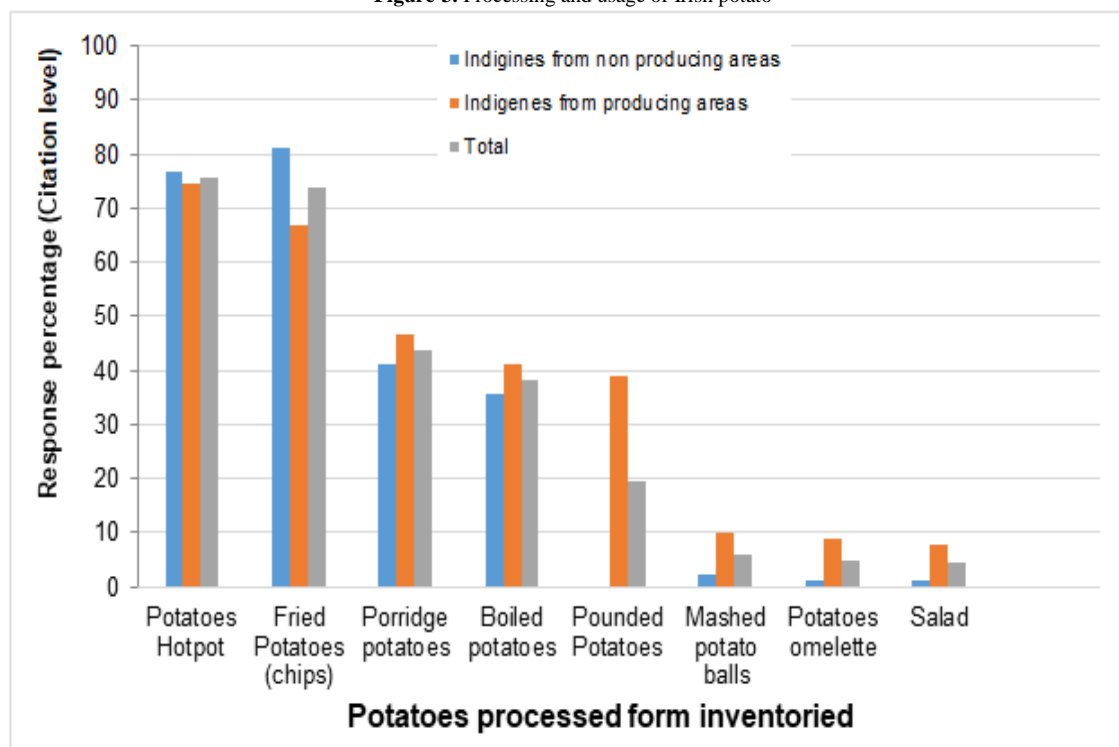
*When I do not have Irish potato in the house, it is hard for me to prepare food for my children. As I grew up, my mother thought me how to make many meals from Irish potato that can be highly cherished by children. I have already trained my children on these meals (fries,*

omelette, puree for the baby, roti) and they like it a lot. Even when I prepare fufu for my husband and the others, I make sure I cook a potato meal for the children. They eat potato about four times in a week but it is the principal food that they take to school to eat during break. Since potato is very expensive here in the city, I buy in bits to prepare only for the children. But in case we are chanced to have some potato from the village or my husband happens to buy in a large quantity, I can cook for everybody in the house.

### 3.4. Processing and Usage of Irish Potato

Irish potato was used for cooking a variety of meals in the households. To appreciate the importance of these meals in each household, households were asked to list the meals that they prepared and it turned out that the meals cited in order of highest majority were: potato hotpot (75.6%), fried potato (chips) (73.9%), boiled potato 38.3%, porridge potato (43.9%), pounded potato (19.4%), mashed potato balls (6.1%) and Salad (4.4%) (Fig. 2).

Figure-3. Processing and usage of Irish potato



Considering the two study categories of households, hot pot (74.4%), fried potato (chips) (66.7%), porridge potato (46.7%) and Pounded Potato 38.9% were most cited by respondents from the producing areas while respondents from non-producing areas cited fries 81.1%, potato hotpot 76.7%, boiled potato 35.6% and porridge potato 41.1%. This shows some extend of distinction between the use of potato as food in producing and non-producing areas. The description of these various meals and their sociocultural contexts are presented in Table 4.

Table-4. Description of various meals and socio-cultural contexts

Meal	Description	Socio-cultural Perception
Boiled potato	These were fresh potato tubers boiled and eaten with a sauce, beans, or any vegetable	Ordinary meal taken during lunch or dinner. The amount of beef, fish or chicken in the sauce determines the quality of meal
Fried Potato (chips)	These are potato tubers that are peeled and cut into small slices and fried in oil. The chips are further cooked in different ways or eaten like that. This category also included potato that were boiled half ready and fried in hot oil.	Mostly breakfast and snack meal highly appreciated by children
Mashed potato balls	These are fresh potato tubers peeled, boiled and mashes sometimes with eggs. In other cases, they are mashed and mixed with raw eggs, made in small balls and fried again in hot oil	Not very common. In cases where the potato are mashed and mixed with boiled eggs, the meal is used as infant food and in the case where it is mashed and fried again, it is food



		during ceremony or snacks
Potato omelette	These fried potato chips mixed with eggs and fried again.	Luxury meals eaten in households of high standard or during treats for breakfast
Pounded Potato	Boiled potato mashed with beans, vegetables, spices, oil etc	Traditional meals in most producing areas of the Western highland zone
Porridge potato	Peeled potato cooked into a porridge	Meal prepared during hard times or food scarcity moments
Potato Hotpot	Peeled potato sometime half fried before cooking in lots of special spices, meat, carrot, green beans etc	Ceremonial and special occasion meals or prepared normally in rich households.
Salad	These peeled and boiled potato tubers are cut into small pieces and mixed into a salad	This is ceremonial food rarely prepared in households

Of these meals, it was observed that potato traditional meals in the form of pounded potato and porridge were mostly prepared by households from producing areas. Therefore, people better appreciate other forms of cookery than the tradition form of pounded potato and beans. Other forms of potato cookery have been elaborated by Acquah and Lyonga [13]. In their manual, they produced several standard appellations for potato dishes as used in restaurants following the Cameroonian cuisine. In addition to those cited above, these include grated potato cake, potato scotched egg, roasted potato, potato pepper soup, toasted potato, mashed potato and beans, pounded potato and vegetables or sauce and potato mould. These forms, although not reported by households in this study, may beq incorporated into some of the appellations.

#### 4. Conclusion

Urban Cameroon like most African cities are undergoing a “nutrition transition” in which people tend to consume foods that originate from other places. Cameroon’s urban areas especially the city capital of Yaounde is rapidly growing and there is need to stimulate the intake of new foods to reduce increasing vulnerability to food shortages and consequently hunger. With this new push on production, Irish potato (*Solanum tuberosum*) can play an important role in the national food and nutritional security, poverty alleviation, income generation and can provide employment to urban dwellers. However, culinary procedures related to potato preparation are limited and some people simply stick to their traditional taste and preferences. A number of research studies have already been conducted regarding household issues related to Irish potato consumption. Although potato is consumed by households in producing areas in various forms, for houses from non-producing areas, potato dishes are unusual in their dietary patterns. The aim of this study was to reduce food insecurity and hunger especially in urban areas by increasing the intake of Irish potato in all its forms in urban areas of Cameroon. Findings could be exploited to sensitize and encourage people to consume more Irish potato in order to absorb the increasing production resulting from research and development activities.

From the cross-sectional sample drawn from urban households living in Yaoundé but originating from Irish potato producing and non-producing areas in Cameroon, results showed that the respondents had traditional knowledge and skills that they used in distinguishing preferred raw potato tubers. With regards to Irish potato acquisition mechanisms, a majority of households that had an Irish potato farm were people originating from producing zones. Those from producing areas had a sense on how to distinguish better varieties of Irish potato using characteristics like colour, flesh texture or simply through special relationships with a potato seller. Of the meals observed, potato traditional meals in the form of pounded potato and porridge were mostly prepared by households from producing areas confirming that the predisposition of tradition food systems and preferences stimulate people to consume specific foods in specific ways. It is also important to notice that a village meeting could be an important channel through which to share Irish potato consumption information.

#### References

- [1] Alfa, J. M., Emanuel, S., Marina, A. N., Dorothy, G., Kissah, M., Vasanti, S. M., Nicole, M. W., Donna, S., Frank, B. H., *et al.*, 2012. *Consumption of whole grain staple foods among overweight and obese Tanzanian adults*. A Focus Group Study International Scholarly Research Network.
- [2] Socpa, A., Nkwambi, W., Delbaere, J., Charpentier, C., and Bongsi, S., 2008. *Cameroon: Global analysis on food security and vulnerability*. World Food Program (WFP). *Food security analysis program (Cameroon: Analyse Globale de la Sécurité Alimentaire et de la Vulnérabilité (CFSVA). Programme alimentaire mondial (PAM)*. Rome, Italy: Service de l’analyse de la sécurité alimentaire (OMXF). p. 87.
- [3] Dury, S., Bricas, N., Tchango-Tchango, J., Temple, L., and Bikoï, A., 2002. "The determinant of urban plantain consumption in cameroon." *Food Qual. Preferences*, vol. 32, pp. 81- 88.
- [4] Haasova, S., Elekes, B., Missbach, B., and Florack, A., 2016. "Effects of imagined consumption and simulated eating movements on food intake: Thoughts about food are not always of advantage." *Front. Psychol.*, vol. 7, p. 1691.

- [5] Schippers, R., 1998. "Cash cropping study in Enugu Nigeria. Preliminary overview of field studies." *Journal of Agriculture and Natural Resources*, vol. 1, p. 78.
- [6] Horton, D., 1992. "Produccion, comercialization y programas. In: Potato viruses and their control L. F. Salazar, (ed). CIP, Lima, Peru." *Cameroon Journal of Experimental Biology*, vol. 9, p. 214.
- [7] Struik, P. C. and Wiersema, S. G., 1999. "Seed potato technology. Wageningen Pers printed in Great Britain, Cambridge University press." *Experimental Agriculture*, vol. 37, pp. 125-134.
- [8] Centre International de la Pomme de Terre (CIP), 1999. "Program report: 1993-1994. Lima, Peru."
- [9] Ugonna, C. U., Jolaoso, M. O., and Onwuala, A. P., 2013. "A technical appraisal of potato value chain in Nigeria." *International Research Journal of Agricultural Science and Soil Science*, vol. 3, pp. 291-301.
- [10] FAOSTAT Production-Crops, 2010. *Faostat: Production-crops, 2010 data. Food and agriculture organization of the United Nations*. Rome: Fao statistical Database of the food and Agriculture Organization of the United Nations FAO.
- [11] Foncho, P. A. F., "Future plans and strategies for potato research in Cameroon. In: Potato production and constraints in West and Central Africa: Overview and planning strategies for the future. Report of the workshop held at Bamenda Cameroon," ed Lima, Peru: The International Potato Center, 1989, p. 59.
- [12] Nain, C. W., Njoya, M. A., Mahbou, P. Y., Nche, S. N., Imele, H., Okolle, J., Tata Ngome, P., and Woin, N., 2018. "Book of recipes for potato dishes from the Cameroonians cuisine. FARA Research Report." vol. 4,
- [13] Acquah, E. and Lyonga, S., 1994. "Internal review of the tropical root and tubers research project." p. 78.
- [14] Aldrich, L. and Variyam, J. N., 2000. "Acculturation erodes the diet quality of US Hispanics." *Food Review*, vol. 23, pp. 51–55.
- [15] Setia, M. S., 2016. "methodology series module 3: Cross-sectional studies." *Indian Journal of Dermatology*, vol. 61, pp. 261–264.
- [16] Sedgwick, P., 2015. "Multistage sampling. National library of medicine." *B. M. J.*, Available: <https://doi.org/10.1136/bmj.h4155>
- [17] Ferris, J. N., 1997. *Agricultural price and commodity market analysis*. New York: McGraw-Hill.
- [18] Ngome -Tata, P. I., Mveme, M. C., Ndikumagenge, and Nso, N. A., 2015. "Interface between Local Actors, Livelihoods and Conservation around the Kivu Lake watershed in the African great lakes region." *International Journal of World Policy and Development Studies*, vol. 2, pp. 7-14.
- [19] Garcia, P. and Leuthold, R., 2004. "A selected review of agricultural commodity futures and options markets." *European Review of Agricultural Economics*, vol. 31, pp. 235-272.