GSAR Journal of Agriculture and Veterinary Sciences
ISSN: 3048-9075 (Online)
Abbreviated key title: Glob.J. Agri.Vet.Sci.
Frequency: Monthly
Published By GSAR Publishers
Journal Homepage Link- https://gsarpublishers.com/journal-gjavs-home/

ANALYSIS OF HOUSEHOLD CONSUMPTION PATTERN AND PREFERENCES FOR COWPEA PRODUCTS IN NORTH – EASTERN STATES OF NIGERIA

By

[1]Yakubu, S [1]Atman, F. M. ,[2]Umar,O.M, [3]Sabe, A.T., [3]Ahmad, M.E. [3]Cosmas, W., [2]Eti-Ukwu, A.I and [4]Ocheja, P.I

[1]Department of Agricultural Economics, Faculty of Agriculture and Agricultural Technology, Abubakar Tafawa Balewa University, Bauchi, Nigeria
[2]Department of Agricultural Economics and Extension, sPrince Abubakar Audu University, Anyigba, Nigeria.
[3]Department of Agricultural Economics and Extension, Federal University, Kashere, Nigeria
[4]Department of Economics and Development Studies, Nassarawa State University, Keffi, Nigeria

Article History

Received: 15/03/2026
Accepted: 23/03/2026
Published: 25/03/2026

Vol – 3 Issue –3

PP: -47-54

Abstract

The paper examined the households' consumption pattern and preference for cowpea products in North – Eastern States, Nigeria. Multistage sampling techniques was used to select the sample size for this research. Data were collected with the aid of 4,767 structured questionnaires administered to cowpea consumers in the study area. Data were analyzed using descriptive statistics and multinomial logistic regression. The result of multinomial logistic regression showed that age, sex, income, taste, grain damage had (P<0.1), household size, price of cowpea types, ease of preparation, and storage quality had (P<0.01) while economic benefit had (P<0.05) and were significant factors in determining the household consumption pattern and preference for cowpea products. The study recommended that researchers should develop simple appropriate cowpea storage technologies for adoption by consumers and retailers that will reduce the effect of insect infestation.

Keywords: *Consumption, insects, preference*

INTRODUCTION

Cowpea is one the most widely grown food crops in Africa. It is estimated that more than 90% of the world cowpea grain production of 5.7 million tonnes is produced in about 10 million hectares in Africa (FAOSTAT, 2018). The crop is most important in the semi-arid and hot areas of Africa where other crops may fail due to poor adaptation to heat, drought and low soil fertility conditions (Singh and Matsui, 2012; Hall, 2014; Ehlers and Hall, 2017; Singh *et al.,* 2019). Cowpea leaves and immature pods are also consumed as a green vegetable.

Cowpea (*Vigna unguiculata*) commonly referred to as 'beans' in Nigeria has been a major food legume for several decades. Cowpea is an important source of protein. The crop is grown in many parts of Nigeria though much of its production takes place in the savannah region of the country. However, the domestic production is in the hand of small-scale farmers who obtain yield 0f 200-350kg/ha (Singh and Jackai, 1985; Bakoji *et al.,* 2017). Cowpea contains 20-25% protein and 64% carbohydrate. It therefore has tremendous potentials to contribute to the alleviation of malnutrition specifically among poor. Nigeria being one of the developing countries of the sub-Saharan Africa is producing protein food items to meet nutritional needs of its teeming population (Nworgu, 1997; Bakoji *et al.,* 2017). In Africa cowpea provide source of income for women farmers who produce, make and sell snacks food from these nutritious legumes, (Singh *et al.,* 1997; Bakoji *et al.,* 2017). Cowpea has a high potential to increase farmers' and traders' incomes, thereby contributing to poverty reduction and food security. As a food crop, cowpea is a primary source of cheap protein for the ever-growing population of both rural and urban dwellers.

The consumption pattern of a household is the combination of qualities, quantities, acts and tendencies characterizing a community or a human group's use of resources for survival, comfort and enjoyment (Consumption report, 2012). Consumption patterns normally contribute greatly to the social and economic policy of the country. In a developing country like Nigeria, the consumption pattern is skewed towards food i.e., food accounts for a higher proportion of the total expenditure, while in developed countries the opposite is

*Corresponding Author: **Yakubu, S.**

the case. The more developed a society becomes, the less it spends on food and the more it spends on non-food items (Consumption report, 2012). Cowpea provides feed, forage, hay, and silage for livestock, and green manure or maintaining the productivity of soils. When intercropped with cereals, it compensates for the loss of nitrogen absorbed by cereals through nitrogen fixation. It is also a good cover crop that limits soil erosion (Fantaye *et al.*, 2017).

For human consumption, the cowpea is mainly grown for grain (dry and fresh) and sometimes for fresh pods in West Africa, India, and South America, while also grown for leaves in East Africa. It is an underused legume crop with a high potential for food and nutritional security in South Africa and produced for grain, immature green pods and fresh leaves due to its nutritional composition (Gerrano *et al.*, 2015a; 2017a). The cowpea can be used to produce a large range of dishes and snacks (Uzogara and Ofuya, 1992; Asif *et al.*, 2013). Cowpea flour is use in the preparation of cowpea fried paste, cowpea (*kosai*) steamed paste (*moin-moin*) and cowpea dumpling (*dan wake*) and surely provides working mother the opportunity to provide this favorites meal with supports it provide.

Cowpea products have been identified as containing adequate levels of protein to help curb the problem of protein malnutrition. Because of their nutritive value, cowpea products have been identified as good vehicles for combating protein calorie malnutrition in Nigeria. Cowpeas can be processed into many local low-cost, but highly nutritious ready-to-eat or partially made foods such as: fried cowpea paste (*Akara/Kosai*); boiled cowpea with gari; boiled cowpea and rice; steamed cowpea paste (*Alale/Moin-Moin*/*Tubani*), and cowpea fortified maize dough. Such cowpea products if acceptable and affordable by a broader section of the population will be an important contribution to improving the lives and health of the people of Nigeria.

In spite of the increase in population, total consumption of cowpea in Nigeria, remained almost stagnant. Reasons for such stagnation are not well established. Lack of dietary protein can retard growth in children and in adult, can be a contributing factor in chronic fatigue, depression, slow wound healing and the decreased resistance to infections (Iyangbe and Orewa, 2009). Among the most difficult problems confronting the world communities since the history of mankind have been those of food shortages and diet deficits.

The findings of this study will contribute to the understanding of the factors that influence household consumption pattern and preference for cowpea products in north – eastern States of Nigeria and serve as basis for formulation of strategies for promoting production and local consumption. Information on consumers' preferences will be of value to breeders as they contemplate developing varieties that appeal to consumers. Findings of this study will contribute to the existing body of knowledge on consumer behaviour and serve as a stepping stone for further research.

The limited information on factors underlying consumption pattern and preference of cowpea products affects the ability of producers to respond to specific demand requirements of consumers (Ronner and Giller, 2012). This undermines the on-going efforts to improve the consumption of cowpea products in Nigeria for increasing income and improving food and nutrition security of households.

The broad objective of the study is to analyze the household consumption pattern and preference for cowpea products in the North Eastern States of Nigeria. The specific objectives are to:

i. describe the socio-economic characteristics of cowpea consumers in the study area.
ii. determine the factors influencing preference for cowpea products by households in the study area.
iii. identify the constraints associated with consumption of cowpea products in the study area.

MATERIALS AND METHODS

Sampling Procedure

The six states that comprised the study area were purposely selected because of their high production of cowpea, these states are; Bauchi, Gombe, Borno, Adamawa, Taraba and Yobe States. Five local government Areas were selected from each of the six (6) States selected for this research work. A list of the LGA's in the study areas were prepared from which the LGA's were randomly selected using ballot box.

The sample size for cowpea consumers in the six states were selected randomly in the study area. A list of the villages in each of the Local Government Areas of the States were selected using simple random sampling technique. Also, a key informant was used to prepare sample frames in each village.

Data collection

Primary data were collected with the aid of four thousands seven hundred and sixty - seven (4,767) structured questionnaires administered with the assistance of the trained enumerators to Cowpea consumers in the six states: Bauchi (760), Gombe (790), Borno (750), Adamawa (961), Taraba (767) and Yobe (739) States of the study areas. However, secondary sources of data are journals, textbooks, newspapers, conference proceedings, Thesis, Dissertations and time series data from the Federal Office of Statistics.

Method of Data Analysis

The collected data were subjected to descriptive and inferential statistics. Descriptive statistics such as frequency distribution; mean and percentage were used while multinomial logit - regression was also used as well as 3 - Point Likert scale.

The level of preference for cowpea types and the level of preference for cowpea products were measured using a 3 - point Likert type of scale of highly preferred (3), moderately preferred (2), and slightly preferred (1). A mid-point was obtained thus, 3+2+1= 6/3 = 2.0. Based on the mid-score decision rule, any mean score less than or equal to 2.0 is graded as no preference. Any mean score greater than or equal

*Corresponding Author: **Yakubu, S.**

to 2.0 implied highly preferred in the statement as the level of preference for cowpea types and products.

RESULTS AND DISCUSSION

The results were based on the analysis from the data which were collected through a set of questionnaires administered. The presentation followed the stated objectives for the study such as; socio-economic characteristics of cowpea consumers, the level of preference for selected cowpea types among households, level of preference for cowpea products and their consumption pattern among households, factors influencing preference for cowpea products and constraints associated with consumption of cowpea products.

Socio-Economic Characteristics of Household Heads

Table 2 presents the distribution of households according to sex of household heads. This result implies that household heads were predominantly dominated by male who are the head of the family. This indicates that males are actively committed to ensuring food availability in their households as well as determining what should be consumed. The result agrees with Abubakar *et al.* (2021); Ojedokun *et al.* (2020); Jimoh (2017). The findings disagree with Bakoji, *et al.* (2017) and Moses *et al*. (2015) who reported that respondents that are engaged in cowpea processing into cowpea fried paste are predominantly females whose main responsibility in the house is to take care of the family.

Table 2 showed the distribution of household heads according to marital status. The results indicates that there will be increase in the demand of cowpea because majority of household heads are married and have children which would help in appreciable number of family labour supply to accomplish various market operations. This finding is also in line with Moses *et al*. (2015), Solomon (2018) and Banmeke (2013) who reported that majority of the respondent were married and can cater for the family needs.

The level of education determines the level of opportunities available to improve livelihood strategies, enhance food security, and reduce the level of poverty. It affects the level of exposure to new ideas and managerial capacity in marketing and the perception of the household members on how to adopt and integrate innovations into the household's survival strategies. Educational status of the household heads revealed most of the household heads are literate and can know the nutritive value and health benefit of consuming cowpea products. Nwajiuba (2018) opined that education and enlightenment have played significant role in creating awareness of the nutritive value of food items in Nigeria.

Table 2 showed that majority of the household heads were farmers. This means that household heads can cater for the nutritional requirement of their family by their farming occupation and also increase their income. This finding disagrees with Abubakar *et al.* (2021), Ojedokun *et al.* (2020) who reported that majority of the household consuming cowpea were civil servant in Bauchi State and Oyo State, respectively.

Older farmers may have more resource that makes it more likely for them to try new technologies. On the other hand, it may be that younger farmers are more likely to adopt than older farmers because of better education and more exposure to new ideas as can be seen from the table 2.

The table also reveals that majority of the household size had more dependents and therefore are more likely to adopt more innovations.

The table reveals that the more farmers had longer years of farming experienced the more they are likely to adopt new innovations and technology. It is also reveals from the table that that respondents with more resources including land is more likely an advantage of new technology. The table indicates that 83.24% of the respondents had less than five hectares of land while 16.76% of them had between 6-10 hectares of land.

Table 2: Socio – Economic Characteristics of the Respondents

Variables	Frequency (4,767)	Percentage (100%)
Sex		
Male	3,098	64.99
Female	1,669	35.01
Total	**4,767**	**100.0**
Marital Status		
Single	574	12.04
Married	3,432	71.99
Divorced	364	7.64
Widowed	397	8.33
Total	**4,767**	**100.0**
Educational level		

*Corresponding Author: **Yakubu, S.**

Not educated	11	7.9
Qur'anic Education	31	22.1
Primary education	8	5.7
Secondary education	51	36.4
Tertiary education	39	27.9
Total	**4,767**	**100.0**
Occupation		
Farmers	1,698	35.62
Traders	830	17.41
Civil servants	741	15.54
Artisans	1,498	31.43
Total	**4,767**	**100.0**
Age (years)		
25 -35	900	18.88
36-45	1,645	34.51
46-55	1,470	30.84
56 and above	752	15.76
Total	**4,767**	**100.00**
Family Size		
1-10	2,645	55.48
11-20	1,470	30.84
21-30	452	9.48
31 and above	200	4.19
Total	**4,767**	**100.00**
Years of Farming experience		
1-5	327	6.86
6-9	1,576	33.06
10 and above	2,864	60.08
Total	**4,767**	**100.00**
Mode of land acquisitions		
Inheritance	2,645	55.48
Lease	1,576	33.06
Purchase	320	6.71
Borrowing	226	4.74
Total	**4,767**	**100.00**
Types of labour		
Family labour	650	13.63
Hired labour	3,867	81.12

*Corresponding Author: **Yakubu, S.**

Family and hired labour	250	5.24
Total	**4,767**	**100.00**
Size of farmland		
1 -5	3,968	83.24
6-10	799	16.76
Total	**4,767**	**100.00**

Source: Field Survey, 2021

Factors Influencing Preference for Cowpea Products among Households

The result of the multinomial logit regression analysis was presented in table 13. The result revealed that the log-likelihood function was -195.870, the pseudo R^2 was 0.1505, and this means that the full model containing the independent variables represents a 15.05% improvement in fit relative to the null model. The Prob>chi-square shows that the entire model was significant at (P>0.01) level of significance indicating the fitness of the entire model. The result also revealed that, age of the household heads, sex of household heads, household size and income of the household heads significantly influenced household consumption preference for cowpea products. The result revealed that price of cowpea varieties, grain damage, economic benefit, taste, ease of preparation and storage quality were the significant reasons for preference of cowpea products.

The coefficient of age was positive and statistically significant at (P<0.1) for *moin-moin* cowpea porridge; and cowpea soup, respectively. This means that for a unit increase in age of the household heads, the likelihood for preferring *moin-moin*, cowpea porridge and cowpea soup as the main cowpea product increases relative to *akara* as the main product. This indicated that an increase in age of household head by 1 year would increase the likelihood of household's preferences for *moin-moin*, cowpea porridge and cowpea soup by 0.6626, 0.2484 and 0.2467.The finding agrees with Abubakar *et al.* (2021) who found positive relationship between age of household heads and preference for cowpea varieties. Similarly, the result also revealed that the coefficient of sex was positive and statistically significant at (P<0.1) and (P<0.01) for cowpea porridge and cowpea soup, respectively, while negative and statistically significant at (P<0.1) for cowpea dumpling. This means that sex of the household heads increases the level of preference for cowpea porridge and soup by 1.2049 and 2.2216 and also decrease for cowpea dumpling by 1.8349. The finding disagrees with that of Abubakar *et al.* (2021) who found no relationship between sex of household heads and preference for cowpea varieties. Also, the result further revealed that the coefficient of household size was positively significant at (P<0.1) for *moin-moin* and cowpea soup; (P<0.01) for cowpea dumpling and cowpea porridge. This means that for a unit increase in household size, the likelihood for preferring *moin-moin*, cowpea soup; cowpea dumpling and cowpea porridge tends to increase relative to *akara* as the reference cowpea products. This implies that an increase in household size by 1 person would increase the likelihood of household's preference for moin-moin, cowpea soup; cowpea dumpling and cowpea porridge by 0.1362, 0.1332; 0.2660 and 0.2423, respectively. The result also indicated that the coefficient of income was positive and statistically significant at (P<0.1)for *moin-moin*. This means that as income of the household heads increases the likelihood for preferring *moin-moin* increases relative to *akara* as the main cowpea product. This indicated that as income increases by ₦1, the likelihood of household's preference tends to increase by 0.0000.

The coefficient of price of *kanannado* variety was negative and statistically significant at (P<0.1) for *moin-moin*, cowpea dumpling and cowpea porridge and (P<0.05) for cowpea soup. This means that as price of *kanannado* variety increases the likelihood for preferring moin-moin, cowpea dumpling, cowpea porridges and cowpea soup decreases relative to *akara* as the reference cowpea product. This indicated that as price of *kanannado* variety increase by ₦1, the likelihood of household preference for *moin-moin*, cowpea dumpling, cowpea porridge and cowpea soup tends to decrease by 0.0165, 0.0535, 0.0240 and 0.0442, respectively. This agrees with the finding of Ojedokun *et al*. (2020) who found an inverse relationship between price of *Milk* and *Sokoto* varieties and the preference for household consumption for cowpea varieties. Similarly, the coefficient of price of *kwankwasiya* variety was positive and statistically significant at (P<0.05) and (P<0.1) for *moin-moin* and cowpea soup and inversely statistically significant at (P<0.1) both in cowpea dumpling and cowpea porridge. This means that an increase in price of *kwankwasiya* variety by ₦1 increase the likelihood of household preference for *moin-moin* and cowpea soup by 0.0233 and 4.0812, respectively. However, an increase in price of *kwankwasiya* variety reduces the likelihood of household preference for cowpea dumpling and cowpea porridge by 5.7759 and 0.4944, respectively relative to *akara* as the main cowpea product.

Furthermore, the coefficient of price of silver variety was positively significant at (P<0.01) and (P<0.1) for *moin-moin* and cowpea porridge. This means that an increase in price of silver variety by ₦1, increase the likelihood of household preference for *moin-moin* and cowpea porridge by0.0894 and 0.7767, respectively. Also, the coefficient of price of IAR-48 variety was positively significant at (P<0.1) for *moin-moin* and negatively significant at (P<0.1) for cowpea dumpling. This means that an increase in price of IAR-48 variety would increase the likelihood of household preference for *moin-moin* relative to *akara* as the preferred cowpea product. This indicated that an increase in price of IAR-48 variety by ₦1 would increase the likelihood of household preference for

*Corresponding Author: **Yakubu, S.**

moin-moin by 0.0565. However, an increase in price of IAR-48 variety would decrease the likelihood of household preference for cowpea dumpling relative to *akara* as the main cowpea product. This means that an increase in price of IAR-48 variety by ₦1 would decrease the likelihood of household preference for cowpea dumpling by 2.1899 relative to *akara* as the main cowpea product.

Also, the coefficient of grain damage was negative and statistically significant at (P<0.1) both for *moin-moin* and cowpea soup. This means that there is an inverse relationship that exists between grain damage and household preference for *moin-moin*. This indicated that grain damage can reduce the likelihood of household preference for moin-moin and cowpea soup by 0.5583 and 0.8820. This finding disagrees with Abubakar *et al.,* (2021) and Ojedokun *et al.,* (2020). Furthermore, the coefficient of economic benefit was negatively significant at (P<0.01) for *moin-moin* and positively significant at (P<0.1) for cowpea porridge. This means that the economic benefit of cowpea types tends to reduce the household likelihood of preferring *moin-moin* relative to *akara* as the main cowpea product. This implies that the economic benefit of cowpea types tends to decrease the likelihood of household preference for *moin-moin* by 0.8370 relative to *akara* as the main cowpea product. However, the economic benefit of cowpea types tends to increase the likelihood of household preference for cowpea porridge by 0.6314 relative to *akara* as the main cowpea products. This finding disagrees with Abubakar *et al.* (2021), Ojedokun *et al.* (2020) and Oyewale, (2016).

Moreover, the coefficient of taste was positive and statistically significant at (P<0.1) both for cowpea dumpling and cowpea soup, respectively. This means that an increase in taste of cowpea product would increase the likelihood of household preference for cowpea dumpling and cowpea soup relative to *akara* as the main cowpea product. This implies that an increase in taste would increase the likelihood of household preference for cowpea dumpling and cowpea soup by 0.8933 and 1.0891. This agrees with Abubakar *et al.,* (2021) who reported significant relationship between taste and household preference for cowpea varieties in western zone of Bauchi State, Nigeria. Similarly, the coefficient of ease of preparation for cowpea soup was positive and statistically significant (P<0.01). This implies that as ease of preparation is positive the likelihood of household preference for cowpea soup tends to increase by1.7260 relative to *akara* as the main cowpea product. Lastly, the coefficient of storage quality of cowpea types was positive and statistically significant at (P<0.01) for cowpea dumpling. This means that storage quality determines the quality of cowpea types to be processed into cowpea product. If it indicates positive, it can withstand infection and other storage problems. So, storage quality increases the likelihood of household preference for cowpea dumpling by 1.5903 relative to *akara* as the main cowpea product.

Table 3: Factors Influencing Preference for Cowpea Products among Households

Variables	*Moin-moin*	Cowpea Dumpling	Cowpea Porridge	Cowpea Soup
Age	0.6626*	0.4410	0.2484*	0.2467*
	(0.050)	(0.327)	(0.018)	(0.020)
Sex	0.6482	-1.8349*	1.2049*	2.2216***
	(0.217)	(0.077)	(0.047)	(0.001)
Household size	0.1362*	0.2660***	0.2423***	0.1332*
	(0.033)	(0.003)	(0.001)	(0.017)
Educational level	-0.2448	0.6481	0.2111	0.0643
	(0.236)	(0.120)	(0.439)	(0.845)
Income	0.0000*	3.2506	-1.6606	4.0706
	(0.027)	(0.827)	(0.941)	(0.822)
Price of *kanannado*	-0.0165*	-0.0535*	-0.0240*	-0.0442**
	(0.084)	(0.008)	(0.045)	(0.002)
Price of *kwankwasiya*	0.0233**	-5.7759*	-0.4944*	4.0812*
	(0.005)	(0.097)	(0.023)	(0.050)
Price of silver	0.0894***	0.4418	0.7767*	-2.1265
	(0.000)	(0.990)	(0.052)	(0.723)
Price of IAR-48	0.0565*	-2.1899*	-0.6508	2.6101
	(0.046)	(0.034)	(0.435)	(0.435)
Time of cooking	0.1005	0.4157	0.3890	0.4384
	(0.706)	(0.241)	(0.143)	(0.284)

*Corresponding Author: **Yakubu, S.**

Grain Damage	-0.5583*	0.2370	0.2777	-0.8820*
	(0.071)	(0.462)	(0.209)	(0.007)
Economic benefit	-0.8370***	0.2869	0.6314*	-0.6592
	(0.000)	(0.562)	(0.036)	(0.107)
Palatability	-0.1053	1.3967	0.2201	-0.3587
	(0.599)	(0.163)	(0.442)	(0.364)
Taste	-0.0172	0.8933*	-0.0087	1.0891*
	(0.908)	(0.088)	(0.963)	(0.013)
Ease of preparation	0.1127	0.2318	0.1933	1.7260***
	(0.535)	(0.747)	(0.356)	(0.000)
Storage quality	-0.1077	1.5903***	-0.2324	0.1029
	(0.426)	(0.000)	(0.183)	(0.767)
Constant	10.2347*	-4.4663	3.2962	9.4957
	(0.014)	(0.557)	(0.512)	(0.186)

Source: Field Survey, 2021. Figures in parentheses are P>|z|.

Note: The reference category is *Akara*.

*, ** and *** are 10%, 5% and 1% level of significance.

Constraints Associated with Consumption of Cowpea Products by Households

Table 4 shows the distribution of households according to constraints associated with consumption of cowpea products. The result revealed that 85.7% of the households are faced with the problem of insect infestation on cowpea before been processed into different cowpea products which ranked as 1st, followed by high cost of cowpea which hinders the purchase of cowpea before processing it to other form which ranked 2nd. Risk of constipation ranked 3rd, poor storage of grains at home ranked 4th, unavailable of cowpea all year round ranked 5th and longtime of cooking ranked 6th. This implies that households in central zone of Bauchi State were faced with problem of storage of cowpea due to insect infestation. High cost of cowpea due to unavailability of the grain all year round, and risk of constipation can be severe in some people for consumption of cowpea products. The finding agrees with Abubakar *et al.* (2021) who reported that households in western zone of Bauchi State were faced with high cost of cowpea and abdominal discomfort as constraints associated with household preference for cowpea and its products.

Table 4: Constraints Associated with Consumption of Cowpea Products

Constraints	Frequency*	Percentage	Rank
Insect infestation	3,909	82.00	1st
High cost of cowpea	3,718	77.99	2nd
Risk of constipation	3,575	74.99	3rd
Poor storage of grain at home	2,383	49.99	4th
Unavailable all the round	1,954	40.99	5th
Long time in cooking	1,668	34.99	6th

Source: Field Survey, 2021. * Multiple responses

Conclusion

The result also concluded that age, sex, household size, income, prices of cowpea types, grain damage, economic benefit, taste, ease of preparation and storage quality were the factors that significantly influenced household's consumption pattern and preference for cowpea products. The study further concludes that insect infestation, high cost of cowpea and risk of constipation were the major challenges encountered by households in consuming cowpea products. If these constraints are tackled, it will help to improve the consumption of cowpea products.

Recommendations

Based on the findings of this study, the following recommendations were made:

i. Cowpea farmers should produce more of *kanannado* cowpea type since the research shows that majority of the households prefer to consume *kanannado* cowpea type. This can be achieved through the use of early maturing *kanannado* cowpea type and adoption of new technologies so as to produce the *kanannado* cowpea type in large quantity which will directly increase the farmer's income thereby improving the standard of living of the farmers.

ii. Cowpea farmers should be educated on the potentials that exist in cowpea processing and

*Corresponding Author: **Yakubu, S.**

how they can seize the opportunities to increase their income.

iii. Researchers should develop simple appropriate cowpea storage technologies for adoption by consumers and retailers.

iv. The results suggest that processors of cowpea should not only compete on the basis of quality, but also on other attributes identified by the study as important determinants of consumer preferential choices.

v. Processors and other stakeholders of cowpea sub sectors should focus on designing marketing strategy that integrates all the above attributes so that their products and services can satisfy customers' needs and wants.

REFERENCES

1. Abubakar, U. F., Sani, R. M. & Sani, M. H. (2021). Analysis of Households' Consumption Preference for Cowpea and its Products in western zone of Bauchi State, Nigeria. A Published Thesis with the Department of Agricultural Economics, ATBU Bauchi, 117pp.
2. Bakoji, I., Azare, I. M. & Babayo, A. (2017). Analysis of Cowpea Fried Paste among Women Entreprenuer in Bauchi Metropolis, Bauchi State, Nigeria. *Global Journal of Agricultural Research*, **6**(2): 10-16.
3. Consumption Report, (2012). Consumption Preference. Available from www.wikipedia.com/consumptionpreferences
4. Fantaye, B., Atsbha, G.& Hintsa, M. (2017). Agronomic performance evaluation of cowpea [*Vignaunguiculata* (L.) Walp] varieties in Abergelle District, Northern Ethiopia.*Journal of Plant Breeding and Crop Science*, **9**(8): 139-143.
5. FAOSTAT, (2018). FAOSTAT [WWW Document]. FAOSTAT. Retrieved From: http://www.fao.org/faost at/en/#data/QC.
6. Gerrano, A. S., Patrick, O A., Willem, S. J., Van, R. & Sunette, M. L. (2015a) Genetic variability incowpea (*Vignaunguiculata* (L.) Walp.) Genotypes, *South African Journal of Plant and Soil*, **32**(3): 165-174.
7. Gerrano, A. S., Jansen, W. S., Rensburg, V. & Adebola, P. O. (2017a). "Preliminary Evaluation of Seed and Germination Traits in Cowpea *Vigna unguiculata (L.) Walp* genotypes" *South African Journal of Plant and Soil*, **34**(5): 399-402.
8. Iyangbe, C. & Orewa, S. (2009). Determinant of Daily Protein Intake among Rural Low-Income Urban Households in South-West Nigeria. *Journals of Nutrition and Research Reviews*, **33**(1): 102-120.
9. Moses, J. D., Daniel, A., Dwana, D. R., Giroh, D. Y., Zalkuwi, J. & Akindele, O. (2015). The Influence of Socio-Economic Characteristics on Consumers' Preference on Fish Purchase in Yola North Local Government Area, Adamawa State. *International Journal of Environmental and Agriculture Research*, **1**(7): 1-11.
10. Nwajiuba, C. (2018). **Introduction to Microeconomics**. Acena Publishers Limited, Owerri
11. Nworgu, F.C. (1997). Effect of Various Protein Source on Broiler of ASAN Lagos:104-113
12. Ojedokun, A. O., Oyewale, A. Y. & Yesufu, O. A. (2020): Households preference for some selected cowpea varieties in Oyo state, Nigeria. *Journal on Processing and Energy in Agriculture*, **24**(3-4):108-114.
13. Ronner, E. & Giller, K. E. (2012). Evaluation of Cowpea Genotypes for Resistance to Fusarium redolens in Uganda. *American Journal of Plant Sciences*, **8**(9): 34 – 51.
14. Salawu, M. B., Ibrahim, A. G., Lamidi, L. O. & Sodeeq, A. E. (2014). Consumption and Consumer Preference for Poultry Meat Types in Ibadan Metropolis. *Journal of Economics and Sustainable Development*, **5**(28), 20-25.
15. Singh, S. R. & Jackai, E. N. (1985). Insect Pest of Cowpea I Africa: their Life Cycle Economic Importance and Potential for Control in S. R Singh and K. O Rachie (eds).Cowpea Research, Production and Utilization (CRPU)S.R John Wiley and Son Ltd, pp217-231.
16. Singh, B. B. & Matsui, T. (2012). Root Characteristics of Cowpea Related to Drought Tolerance at the Seedling Stage. *Journal of Experimental Agriculture*, **39**(1): 29-38.
17. Singh, B.B., Chamblis, O.L. & Sharma, B. (1997). Recent advances in cowpea breeding. Pages30–49 *in* Advances in cowpea research, edited by B.B. Singh, D.R. Mohan Raj, K.E. Dashiell,and L.E.N. Jackai. Co-publication of International Institute of Tropical Agriculture (IITA)and Japan International Research Center for Agricultural Sciences (JIRCAS). IITA, Ibadan,Nigeria.
18. Singh, B., Ehlers, J., Sharma, B.& Freire Filho, F. (2019). Recent progress in cowpea breeding. In: Fatokun, C.T.S.A., Singh, B.B., Kormawa, P.M. (Eds.), Challenges and Opportunities for Enhancing Sustainable Cowpea Production. IITA, Ibadan, Nigeria,pp. 22–40.
19. Uzogara, S. G. & Ofuya, Z. M. (1992). Processing and utilization of cowpeas in developing-countries-A review. *Journal of Food Processing and Preservation* 1992; 16: 105-147.

*Corresponding Author: **Yakubu, S.**