Proximate, Functional, Selected Vitamin and Mineral Composition of Four Culinary Tourism from Cross-River State of Nigeria.   (Astragalus)

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Abstract

This paper assess the proximate, functional, selected vitamin and mineral composition of four culinary tourism from cross-River State of Nigeria. The ingredients were purchase from a local market in Idah, Kogi State, Nigeria. The four dishes were prepared under good hygienic conditions in an established laboratory and sent to the analytical laboratory for there proximate, functional vitamin and some selected minerals. The result revealed that the oil and water absorption capacities of the dishes ranges from 5.44(19.27%) – 8.64(30.61%) and 5.89(23.13%)-6.89(27.06%) respectively. Moisture and fat content ranges from 62.57(24.30%) – 65.90(25.60%) and 6.86(17.85%)-12.11(31.50%) respectively. Whereas the vitamin content of the dishes ranges from 2.98(28.85% vit A)-3.677(28.14% vit A), 0.48(22.97 Vit E)-0.56(26.80% vit E), 0.83(24.08% vitD)-0.93(26.35% vit D), 0.32(32(21.99% vit K)-0.43(30.50% Viit K) and 0.59(19.61% Vit B12)-0.71(27.84vitB12) respectively. The calcium and magnesium ranges from 0.66(23.08%)-0.76(27.27%), sodium and potassium ranges from 0.60(23.35%)-0.64(24.90%) and 0.88(22.92%)-1.20(30.73%) respectively. Whereas Iron and Zinc ranges from 1.29(23.96%)-1.37(28.49%) and 0.86(23.12%)-0.97(26.08%) respectively. In the dishes. The base line data recorded in this research would undoubtedly, serve not only as a guide to tourist but detailed documentation of these culinary tourism of Cross-River State of Nigeria.

Keywords: Culinary Tourism, Tourist, Food, Destination, Cuisines and Dishes.

INTRODUCTION

Food is any-thing nutritious that people eat. In some countries it is legally defined and in many places it is heavily regulated Getz et,al (2014). Getz et al (2014) further stressed that; it is generally recognised that all humans have a fundamental right to be free of hunger; famme is a periodic curse in some areas while others enjoy food in abundance. Culinary tourism has attracted significant scholarly attention over the past decade, and given that the proclivity of travellers for food experiences is projected to increase, this trend is likely to continue (Culinary Tourism, 2011). Correia et al,(2008) in their research found out that all travellers and tourists must eat, therefore food is an important destination attribute. And an estimate of 25% of tourism expenditure is attributable to food products. Smith and Xiao (2008) opined that there is recognition of the importance of food and beverages in influencing how visitors perceive a destination and in generating satisfactory travel experiences.

Food as a cultural artefact provided a medium for the expression of local culture, as such food are fundamental to destination imaging and indeed food purchase by tourists stimulates the local economy at all levels (Hjalager and Richards, 2002). Timothy and Ron (2013) say foodways and cuisine are a more important part of the tourism system than simply food and food services; they are imbued with culture meaning, experience and permanence. And that culinary art is, without doubt, one of the most salient and defining markers of cultural heritage and tourism. Okumus et al (2007) says food is definitely an attraction, and has matured into a highly sought-after niche market in its own right. Nwokorie; (2015) view food as a physical necessity, that embodies cultural identity and individuality, giving the tourist an insight into a new experience, the exotic, the unusual and a deeper insight into the places they are visiting. Culinary tourism could be commercial or domestic, festive or ordinary; involving restaurants, festivals, cookbooks and nutritional composition of major cuisine of an area; food and wine tours and other similar way of physically experiencing the product of a particular destination such as cross-river state.

EXPRESSING FOOD AS A CULTURE

'Food means more than eating which relates to issues of identity, culture, production, nutritional composition, consumption and, increasingly, issues of sustainability'(Hall and Mitchell, 2000:29-37). In reference to the symbolic value of food, it can only be considered part of local gastronomy (i.e. be accepted as such) if it is adopted, as characteristics, by the inhabitants of a region/country (Bourdieu, 1929 in Frochot, 2003). The dislike of certain Asia countries for cheese, the igala tribe of kogi state repulsion for certain sea food such as snail, periwinkle, oystals or the dislike of the hausa for cassava mold. Affirms that food is culturally conditioned, that men do not eat what they like, they eat what they are used to' (Bourdieu, 1979,345 in Frochot, 2003).

Further, food defines cultural identity for inhabitants of particular region and becomes a unifying trait.

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This also implies that food can be a strong identifying theme in tourism promotion: 'food is therefore intimately tied up with the production and consumption of the cultural meaning of place and space' (Hall and Mitchell, 2000:35).

This remains the case in cross-river state of Nigeria, where the identity of its ethnic is tightly linked to the local production of specific food commodities and cultural cuisine : food in its own act as a form of cultural communication, and the way in which it is eaten and shared creates strong social bonds (Poulein,1996, Ryan, 1997 in Frochot,2003). Frochot, 2003:81 opened that for any foreign visitors to any place knowledge of local recipes and embedded food habits can be used to affirm status among peers. Thurs by eating local food and sharing it with local inhabitants in a genuine setting, the tourist becomes an actor within that culture instead of a spectator.

One can clearly see that the most existing motivations pertaining to tourism consumption can be experienced through a culinary experience (Frochot, 2003:82). Culinary Tourism is positioned as providing opportunities for tourist to relax in a typical restaurants and cafes; to experience the excitement of trying new food and new dining scenarios; to escape the pressure of everyday life; to acquire social and cultural capital; and to engage in educational activities.

STATEMENT OF PROBLEM

Most localities in Nigeria are endowed with cuisines that are of special interest to both local and international tourists. For instance, Calabar annual carnival of cross-river state have exotic portrayed in their annual carnival which attract tourists from far and near. The lack of understanding of nutritional composition of these cuisines as a veritable tool for development and sustaining culinary Tourism in local and international economic development has caused the nature of these carnivals to remain parallel over the years devoid of new innovations in product diversifications, marketing and commodity branding.

OBJECTIVE OF THE STUDY

This paper intended to create awareness on the proximate, functional, selected vitamin and mineral composition of four culinary Tourism from cross-river state of Nigeria.

MATERIALS AND METHODS

Sources of materials: Editan leaves (Lasianthera Africana), Afang/Okazi leaves (Gnetum Africanum), mkpafere leaves /oha (herinsia crinata), spinach (Aimarath), water leaves (Talinum triaglare), uyayak (infusion stalk),beef, stock fish, dry fish, fresh red pepper, dry milled pepper, periwinkle, Cray fish, cow skin, palm oil, palm fruit, salt, magi, water yam (D.alata) and local thickener or corn starch powder and onion. Purchased from a local market in Idah town kogi state, Nigeria.

Method of stewing Abak stew (yield four covers): The 400g of beef, 100g of cow skin, 100g of dry fish, 20g of stock fish and 30g of Cray fish were all thoroughly washed and placed aside separately. The beef and stock fish were seasoned with small salt, Onion, and boiled for 30mins.- 40mins. The cow skin is diced, added to the stock and simmer for another 10mins. The palm fruit is washed and boiled at the same time in another pot for 30mins or till the flesh is removing from the nut. The palm fruit is pounded and wash out with 200mls of fresh clean water. Strain out and add the stock to the pot containing the beef and other ingredients. Add the 10gs of corn starch powder and continues the stewing. The well cleaned periwinkle is add to the stock, dried milled pepper to taste and continue to simmer, for another 10mins. Correct the seasons and add the washed and picked editan leaves is added to the stock and allowed to simmer for 10mins – 20mins. Remove from heat, serve hot with any solid mold of your choice.

Method of stewing Afang stew(yield four covers): The 300g afang leaves and 100g of water leaves are thoroughly washed, removed from the stalk and placed in a collander to drain. The 400g of beef, 50g stock fish, 100g dried fish, 100g cow skin were washed and place aside. The 50g of periwinkle was also cleaned, washed and place aside. The beef sliced into desired sized, the stock fish added, seasoned and put to simmer for 30mins – 40mins, then the diced cow skin and periwinkle are added and allow to simmer for another 20mins. The thoroughly washed and sliced water leave, 2 cubes of maggi cubes, washed Cray fish, freshly grand pepper, 100mls of palm oil, salt and allowed to simmer for another 15mins. Sliced the afang leaves and pound in a mortal, add to the simmering stock, allowed to cook for another 10mins, correct the seasoning, remove from heat and serve hot with any solid mold.

Method of preparing mkpafere stew(yield 4 covers): The 200g of Oha leave was washed and remove from the stalk,place in to a colander for the water to drain and put aside. The 400g of beef, 100g fish, 50g stock fish and 30g cray fish were thoroughly washed. All others were seasoned with salt,one cube of maggi, 10g onion and place of heat to boiled, till tender. Add the 10g uyakak, oha leaves and palm oil. Allow to summer for 20mins and correct the seasonings. Remove from heat and serve with any mold of your choice.

Method of preparing Ekpan-Nkukwu(yield 4 covers): The 200g spinach (washed and leaves removed

from stalk) is put into a colander to drain. Wash and remove the skin of the 1kg water yam. Grate with grater into a clean bowl and cover. Wash the 400g beef, 50g Cray fish, 100g dry fish,, 50g periwinkle and 50g crayfish place aside. Season the beef, stock fish with 5g onions, 5g salt and 1 cube of maggi, place on heat till tender. Add the dry fish and crayfish and bring to boil by adding more water to set enough stock for another 10mins. Add the palm oil to a thick bottom pot and bring to heat without burning. Mix the rest of the salt to the grated water yam, fold one by one in the spinach leaves and place in the hot pot with the warm oil. Turn the already prepared stock and 15g dry ground pepper on to the folds and allow to simmer for 20mins-30mins. Check and correct seasons,remove from heat and garnished with grilled fresh tomatoes.

Evaluation of functional properties: water and oil capacity was determined according to the method described by Beuchet (1977). Foam capacity and stability was determined by method described by Onimawo et al (1998) and emulsion capacity and stability were determined by the method described by Vasumatou et al (1972).

Evaluation of chemical properties: The chemical composition were determined using the standard procedure of official analytical chemists (AOAC, 1995). The micro Kjedahl technique for protein (Nx6.25), moisture (hot air oven at 105^0c and drying to constant weight) ash was determined by heating the sample in a muffle furnace at 600^0c for two hours, fat by means of soxhlet extraction method. Crude fibre was determined by heating the samples with acid and alkaline. carbohydrate was determined by difference. The vitamin and mineral were determined using the atomic absorption spectrophotometer.

Data Analysis: The data analysis from chemical analysis were analysed using mean and standard deviation. (means $\pm$ SD of 3 determinations).

RESULT AND DISCUSSION

Table 1:shows the mean% values of functional properties of the dishes per 100g edible proteins has water absorption capacity oil absorption capacity ranging from 8.64(30.61%), 8.58(30.39%), 5.57(19.73), 5.44(19.29%) and 6.89(27.06%), 6.66(26.16), 6.02(23.04%) and 5.89(23.13%) highest to lowest respectively. Whereas the highest mean% of emulsion capacity and emulsion stability range from 72.73(27.58%), 68.72(26.06%), 68.57(26.01%), 63.64(24.14%) and 43.86(26.43%), 42.56(26.65%), 40.28(28.28%) and 39.23(23.64%) all in the same range. In the same vein, foam capacity and foam stability 54.65(25.27%), 53.90(24.92%) and 53.80(24.88%) and 11.63(27.51%), 10.62(25.12%), 10.12(23.94%) and 9.90(23.42%) respectively.

Table II: shows the proximate properties of the four dishes that protein, moisture, fats, ash, fibre and carbohydrate (CHO) of 100g edible portion were the highest with mean% values of 16.11(30.04%), 14.72(27.45%), 11.98(22.34%), 10.82(20.18%) in dishes A, D, B and 65.90(25.60%), 64.54(25.09%), 64.43(25.03%), 62.57(24.30%) in dishes B, A, D and C respectively. 12.11(31.50%), 10.87(28.28%), 8.60(22.37%), 6.86(17.85%) in dishes A,D,B,C and 1.84(29.11%), 1.65(26.11%, 1.45(22.94%) 1.38(21.84% in dishes A,B,D,C. in the same vain fibre and carbohydrate (CHO) exhibits the highest with mean% values of 0.56(26.92%), 0.53(25.50), 0.52(25.00%), 0.47(22.60%) and 16.68(39.60%), 12.53(29.75%), 8.07(20.66%), 4.83(11.49%) in dishes A, C,B,D and dishes C,B,D and C respectively.

Table III: shows the vitamin value of these dishes per 100g of 3.67(28.4%vit. A), 0.56(26.80 Vit E), 0.93(26.35% vitD), 0.43(300.50% vitK), 0.71(27.84 VitB12) in dishes A,D,C and A respectively. The least value of these vitamins in the same order above are 2.98(28.85% dish C), 0.41(22.97% dish C), 0.83(24.08%) dish D), 0.32(21.99% dish C) and 0.59 (19.61% dish D).

Table IV: shows that calcium, magnesium, sodium, potassium, iron and Zinc exhibited the highest mean% values of 0.76(27.27%), 0.63(28.00%), 0.67(26.07%), 1.20(30.73%), 1.37(25.85%) 0.97(26.08%) respectively in dishes B,C,B,A,A and C respectively. The least mean% values of 0.66(23.08% dish A), 0.53(23.56% dish D), 0.60(23.35%dish C), 0.88(22.93% dish D) respectively.

CONCLUSIOIN

The study has shown that the four dishes from this region have good functional, proximate, some mineral and vitamin contents of these dishes are generally within tolerable level of normal physiological function of the body and therefore, strongly recommended for consumers on a sustainable basis.

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Table I mean values, STD and percentage values functional properties of the four dishes

Dishes	Protein	Moisture	Fats	Ash	Fibre	Carbonhydrate
A	16.113$\pm$0.01(30.0%)	64.54$\pm$0.001(25.07)	12.11$\pm$0.001(31.50)	1.84$\pm$0.001(29.11)	0.56$\pm$0.003(26.92)	4.83$\pm$0.003(11.49)
B	10.82$\pm$0.003(2008)	65.90$\pm$0.004(25,60)	8.60$\pm$0.003(22.37)	1.65$\pm$0.005(26.11)	0.52$\pm$0.002(25.00)	12.53$\pm$0.004(29.75)
C	11.98$\pm$0.003(22.34)	62.57$\pm$0.003(24.30)	6.86$\pm$0.002(17.85)	1.38$\pm$0.003(21.84)	0.53$\pm$0.004(25.50)	16.68$\pm$0.004(39.60)
D	14.72$\pm$0.001(27.45)	64.43$\pm$0.003(25.03)	10.87$\pm$0.003(28.28)	1.45$\pm$0.003(22.94)	0.47$\pm$0.003(22.60)	8.07$\pm$0.002(20.66)

Table II Mean values, standard deviation and percentage of proximate properties of the four dishes.

Dishes	Ibo Absorption capacity	Oil Absorption capacity	Emulsion capacity	Emulsion stability	Foam capacity	Foam stability
A	5.57$\pm$0.003(19.73)	6.66$\pm$0.002(26.16)	68.72$\pm$0.005(26.14	40.28$\pm$0.003(24.28)	54.65$\pm$0.004(25.27)	10.62$\pm$0.002(25.12)
B	8.64$\pm$0.003(30.61)	5.89$\pm$0.003(23.13)	72.73$\pm$0.004(24.14)	39.23$\pm$0.002(23.64)	53.90$\pm$0.003(24.92)	10.12$\pm$0.003(23.94)
C	8.58$\pm$0.004(30.39)	5.89$\pm$0.003(27.06)	72.73$\pm$0.004(27.58)	43.86$\pm$0.003(26.65)	53.90$\pm$0.002(24.92)	11.63$\pm$0.003(27.57)
D	5.44$\pm$0.002(19.27)	6.017$\pm$0.003(23.04)	68.57$\pm$0.003(26.01)	42.56$\pm$0.003(26.65)	53.80$\pm$0.002(24.88)	9.90$\pm$0.003(23.42)

Table III Mean values, STD and percentage of vitamins present in the four dishes

Dishes	Vitamin A	Vitamin E	Vitamin D	Vitamin K	Vitamin B12	
A	3.67$\pm$0.003(28.14)	0.51$\pm$0.008(24.40)	0.88$\pm$0.002(24.93)	0.33$\pm$0.002(23.40)	0.71$\pm$0.003(27.84)	
B	2.98$\pm$0.003(28.85)	0.48$\pm$0.003(22.97)	0.93$\pm$0.003(24.11)	0.34$\pm$0.002(24.11)	0.69$\pm$0.001(27.06)	
C	3.12$\pm$0.003(23.93)	0.54$\pm$0.002(25.84)	0.32$\pm$0.003(21.99)	0.32$\pm$0.003(21.99)	0.65$\pm$0.0022(25.49)	
D	3.27$\pm$0.004(25.08)	0.56$\pm$0.002(26.80)	0.43$\pm$0.003(30.50)	0.43$\pm$0.003(30.50)	0.59$\pm$0.003(19.61)	

Table IV: Mean Values STD and percentage values of some mineral composition of the four dishe

Dishes	Calcium	Magnesium	Sodium	Potassium	Iron	Zinc
A	0.66$\pm$0.003(23.08)	0.55$\pm$0.003(24.44)	0.66$\pm$0.002(25.68)	1.2$\pm$0.003(30.73)	1.31$\pm$0.004(25.85)	0.94$\pm$0.002(25.27)
B	0.76$\pm$0.003(27.27)	0.54$\pm$0.003(24.00)	0.67$\pm$0.004(26.00)	0.9$\pm$0.004(23.44)	1.27$\pm$0.003(23.96)	0.95$\pm$0.002(25.54)
C	0.73$\pm$0.002(25.52)	0.63$\pm$0.003(28.0)	0.6$\pm$0.002(23.35)	0.88$\pm$0.004(22.92)	1.31$\pm$0.003(24.72)	0.97$\pm$0.001(26.08)
D	0.69$\pm$0.002(24.13)	0.53$\pm$0.004(23.56)	0.64$\pm$0.002(22.92)	0.88$\pm$0.003(22.92)	1.35$\pm$0.003(28.47)	0.86$\pm$0.003(23.12)

$\pm$ values show mean $\pm$ SD(%).