Potential of Soyabeans Seasoning with Garlic and Ginger Spices for Sustainable Health in Bauchi State Nigeria

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Abstract

This study assessed the use of soya bean in enhancing ginger and garlic seasoning in food production for healthy eating. The objectives of the research was to; produce soya bean seasoning enhanced with ginger and garlic, to produce dishes using enhanced soya bean seasonings for sensory evaluation to taste for acceptability and to review the health benefits of soya bean seasoning with ginger and garlic. The study adopted both survey and experimental research using a purposive random sampling in getting the data. The population of the study was made of the sensory evaluators drawn from among the staff and students of Federal Polytechnic Bauchi, and chefs from selected hotels in Bauchi, Bauchi State. A random sampling was used where fifty (50) sensory evaluators were selected, comprising 25 persons from the polytechnic community and 25 men and women from the hotels as respondents. The study used dried soya beans, ginger, and garlic as sample A, B, and C respectively. Both descriptive statistics and One – Way Analysis of Variance (ANOVA) were used to analyze the data. The result of the study indicated that soya bean – ginger seasoning differs from soya bean – garlic and soya bean – ginger – garlic seasonings at P = 0.717 and 0.148 > 0.05 but soya bean – garlic seasoning shows no significant difference from soya bean – ginger – garlic seasoning at P = 0.024 < 0.05.soya beans + ginger pepper soup differs with Soya bean + ginger + garlic pepper soup at P = 0.717 and 0.148 > 0.05. Soya bean + garlic jollof rice differs with Soya bean + ginger jollof rice with P= 717>0.05. However soya beans + ginger jollof rice and Soya bean + ginger + garlic jollof rice seasoning shows no significant difference from soya bean – ginger – garlic seasoning at P = 0.024 < 0.05. Soya bean+ ginger + garlic mixed vegetables and Soya bean + ginger mixed vegetables differs at P=0.148 while Soya bean+ ginger + garlic mixed vegetables and Soya bean + garlic mixed vegetables has no significant difference with P = 0.024 < 0.05. The study has opened up more avenues for exploiting the numerous health benefits of soy bean, ginger and garlic therefore recommend that; families and commercial hospitality enterprises should adopt and incorporate soya bean enhanced seasonings into their exquisite cuisine and processing of these seasonings should be done under good hygienic condition to avoid contamination because they easily attract germs.

Keywords: *Seasoning, Soyabeans, Garlic, Ginger, Spices, Sustainable health*

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Background to the Study

Seasoning is the process of adding herbs, salt, or spices to food, seasoning include herbs and spices which are themselves frequently referred to as seasoning soya beans is widely cultivated all over the world. Garlic grows in many parts of the world and is popular ingredients in cooing due to its strong smell and delicious taste. The herb garlic has used as a flavoring since the earliest time of man-kinds history, it has been used however, throughout ancient history, the main use of garlic was for its medicinal properties. Leech (2015) explains that ginger is among the healthiest (and most delicious) spices on the planet. It is loaded with nutrients and bioactive compound that have powerful benefits for your body and brain. Soya has transcended its Asian origins to become the most widely cultivated legume across the globe (Lewin, 2015). Soya beans are traditional part of diet in china, Japan, Korea, Nigeria countries etc. and are currently grown in countries across the world including brazil, Argentina, India unit states and Nigeria. Barnes (2010) discovered that small and unique peptides in soya beans include defacing glycines, Conglycinins and lanansin and all are known to provide us with health benefits, including benefits in the area of improved blood pressure regulation, better control of sugar levels and improved immune function. Ginger can be used fresh, dried powdered, or as an oil or juice, and sometimes added to processed foods. It is a very common ingredient in recipes. Soya beans seasoning which has been used for a long time in many northern Nigerian dishes if enhanced with garlic and ginger will help in promoting healthy eating in must our delicacies.

Bolla (2015), explain that Soya beans foods have become more familiar to consume worldwide and have become a popular choice of many health conscious valued for their Versatility, Taste, Nutritional Content, Environmental Advantages and Health Benefits. Soy available in Boiled Soybeans, Soy Flour, Soy Oil, Soy Sauce, Soy Milk, Soy Tofu, Soy Curd, Fried Soy Curd, Fortified Soy Products for Infants & Women, Fermented Soybeans and other. Soy is used for High Cholesterol, High Blood Pressure &Preventing Diseases of the Heart & Blood Vessels. It is also used for type 2 Diabetes, Asthma, Lung Function, all type of Cancers (Lung Cancer, Endometrial Cancer, Prostate Cancer & Thyroid Cancer) as well as Preventing Weak Bone(Osteoporosis) slowing the Progression Of Kidney Diseases. Other use includes treating Constipation and Diarrhea, as well as Decreasing Protein in the Urine of people with Kidney Disease, Improving Memory and Treating Muscle Soreness caused by exercise. Women use soy For Breast Pain, Preventing Breast Cancer, Preventing Hot Flashes for Breast Cancer, Menopausal Symptoms and Premenstrual Syndrome.

Soya bean is a stable food of great nutritional value. Its importance ranges from milk production, oil processing livestock feeds, industrial uses and human consumption of soya bean (Addo and Oguntona, 1993). Soya bean has been recognized to be an ideal grain for meeting protein and energy requirement of both man and animal. Soyabean is probably the world's most valuable crop, used as feed by billions of livestock, as a source of dietary protein and oil by millions of people, and in the industrial manufacture of thousands of products. Soya bean is such an extremely rich source of protein and fat, and such a good source of energy, vitamins and minerals (Nwokolo, 1996) with an average production cycle of 90-110 days from planting to harvesting.

Complete utilization of soya bean includes in addition to post-production aspects, the application of a range of technologies and including food processing technology, food science and nutrition, food technology, commercial soya foods production, marketing, and nutritional

and health factors. When the pressing needs to alleviate poverty and malnutrition and to improve the welfare of poor people are considered, issues relating to high quality protein food, greater income opportunities for male and female are of paramount importance. Protein content is approximately 40% and fat 20% (Glami, 2002) with considerable variations depending on the cultivars.

Statement of the Problem
Fermented soya beans powder or mold have been used in various houses in the Northern Nigeria as local seasoning which gives taste and flavor to food. Likewise the herb and spices garlic and ginger has served as flavoring since earliest time of mankind history. Despite the way garlic and ginger are widely used in Nigeria and it's proved nutritional value to man, it is observed that it has not gained general acceptance by the public. There are limited research evidence of soya beans seasoning enhanced with ginger and garlic or with other spices in Nigeria therefore this is part of the reasons that prompted this study. Personal observation has shown chemical contents in most of the seasoning used for cooking. Numerous studies have shown the negative effect of consuming chemicals to one's health. The advocating for the consumption of natural food substances is a pressing need for healthy eating and living, It is of this reasons the study seek to carry out this research work in order to promote the healthy eating of local women and low income earner, and to gain general acceptability by the public.

Objectives of the Study
The aim of this study was to assess the use of soya bean in enhancing ginger and garlic recipes in food production for health eating. The specific objectives are
1. To produce soya bean seasoning enhanced with ginger and garlic
2. To produce dishes using enhanced soya bean seasonings for sensory evaluation to taste for acceptability
3. To review the health benefits of soya bean seasoning with ginger and garlic

Research Questions
The questions attempted in this study were directed at the objectives of the study which include the following:
1. What are the soya bean seasonings produced from enhanced ginger and garlic?
2. What are the dishes produced using enhanced soya bean seasonings for sensory evaluation to taste for acceptability?
3. What are the health benefits of soya bean seasoning with ginger and garlic?

Research Hypothesis
This study is premised on the hypothesis that:
H_0: There is no significant difference in the level of acceptability of dishes with soya bean seasoning enhanced with ginger, garlic and ginger-garlic.
H_1: There is significant difference between dishes with soya bean seasoning enhanced with ganger and those with soya bean seasoning enhanced with garlic or ginger and garlic.

Methodology
The method adopted in this study is both a survey and an experimental research, Dloyade and Ogunsola (2009) describes survey research as a collection of sample opinions, attitudes of feeling in order to estimate the total or overall situation. The practical production in this research was conducted in the hospitality laboratory kitchen and restaurant, Federal

Polytechnic, Bauchi, Bauchi State. Soya bean seasoning was produced and enhanced by ginger and garlic and were used in producing different dishes for sensory evaluation to test the acceptability. The population for this study which was made of the sensory evaluators was drawn from among the staff and students of Federal Polytechnic Bauchi, and chefs from selected hotels in Bauchi, Bauchi State.

Random sampling was employed to select fifty (50) sensory evaluators, comprising 25 persons from the polytechnic community and 25 persons from the hotels to form the body of respondents. The taste panelists evaluated the dishes produced from the soya bean enhanced seasoning on the basis of taste, colour, aroma and texture using a likert scale.

The method of data analysis employed by the researchers includes descriptive statistics and One – Way Analysis of Variance (ANOVA). A brief analytical description was included for each statistical presentation in order to aid clarification and to justify findings from the respondents about the variables based on the taste, texture, color, flavor and appearance of dishes prepared.
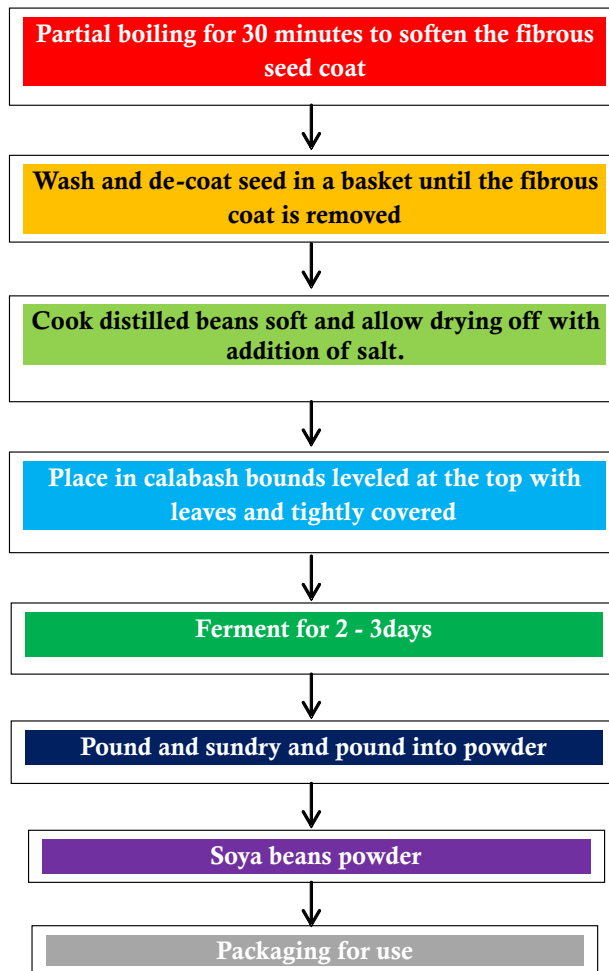
Materials and Methods
Three products were locally processed in the demonstration hotel of the Federal Polytechnic, Bauchi.

Local Processing Procedures for Fermented Soyabeans Seed
Steps:
1. The seeds are partially cooked, De husked in a wooden mortar to remove the fibrous coat.
2. The pounded seed are thoroughly washed in a basket with continuous rubbing until the fibrous coating is removed and skinned off.
3. The beans are then cooked soft and the water is allowed to dry off and then transferred into a calabash, tightly covered and allowed to ferment for three days.
4. Add one tea spoon of salt to 1kg soya beans for preservation
5. Sundry for two days and grind into powder, and is then ready for use.

Flow Chart of Local Processing Fermented Soyabeans Seed

Partial boiling for 30 minutes to soften the fibrous seed coat

↓

Wash and de-coat seed in a basket until the fibrous coat is removed

↓

Cook distilled beans soft and allow drying off with addition of salt.

↓

Place in calabash bounds leveled at the top with leaves and tightly covered

↓

Ferment for 2 - 3days

↓

Pound and sundry and pound into powder

↓

Soya beans powder

↓

Packaging for use

Process for Making Garlic Powder
Materials
i.   Cloves of garlic
ii.   A knife
iii.   Blender
iv.   Food dryer or oven
v.   Trays
vi.   Storage jars
vii.   Mortar

Methods
1.   Peel the cloves
2.   Cut off any dry ends or any blemishes
3.   Blend the garlic cloves in a blender until chopped or minced
4.   Sundry or place the minced garlic onto a food dehydrator tray
5.   Turn on the oven or food dryer, set the temperature to under 200 degrees.

6.   Check often to make sure the garlic does not stick to the trays and burn
7.   Let the garlic back for a few hours when it is complete dry and crisp, remove
8.   Sundry, allow it to completely dry
9.   Place back into a blender or mortar to create a powder

Process for Making Ginger Powder
Materials
1.   Sieve
2.   Bowl
3.   Dry ginger
4.   Mortar

Methods
1.   Wash the dry ginger with little salt, rinse very well
2.   Sundry the ginger
3.   Pound the ginger
4.   Sieve and package for use

Soya Beans with Garlic Seasoning: Recipe for Fresh Fish pepper Soup

	Recipes	No of Cover:25
i.	Fish	20kg
ii.	Onions	5piesce
iii.	Pepper	some
iv.	Vegetables	some
v.	Soya beans with garlic seasoning	88g

Method
1.   Wash and cut the fish
2.   Add water, onions pepper, salt with fresh fish head into the pot and put on the fire
3.   Boil for 30 minutes
4.   Add the remaining fresh fish and soya beans with garlic seasoning
5.   Add the vegetables and cook for 30 minutes
6.   Remove and serve

Soya Beans with Ginger Seasoning Recipe for (Jollof Rice)

Ingredients		No of Cover: 25
i.	Rice	3kg
ii.	Chicken	10kg
iii.	Tomatoes	30g
iv.	Onions	100g
v.	Salt	pinch
vi.	Vegetable oil	½ gallon
vii.	Tin tomatoes	1 tin
viii.	Carrot	300g
ix.	Cabbage	1kg
x.	Salad cream	1 bottle
xi.	Soya beans with ginger seasoning	

Method
1.　　Wash the rice
2.　　Blend the onions and fresh tomatoes
3.　　Blend the onions and tomatoes
4.　　Fry the onions with fresh tomatoes and add the tomatoes pure in thick button pot
5.　　Add the washed rice and the chicken stock and cook
6.　　Fry the chicken to be serve with the rice
7.　　Wash and cut the cabbage and carrot
8.　　Add the salad cream to the vegetables to serve as side salad.

Soya Beans with Garlic and Ginger Seasoning for Vegetable Soup (MiyaTaushe)

Ingredients	No of Cover: 25 persons
i.　Crack rice	3kg
ii.　Chicken	10kg
iii.　Beef	1kg
iv.　Dried fish	1kg
v.　Palm oil	1 bottle
vi.　Groundnuts paste	500g
vii.　Tomatoes	some
viii.　Pepper	some
ix.　Onions	some
x.　Sorrel leave	20g
xi.　Spinach	600g

Method
1.　　Wash and boil the beef with salt and onions
2.　　Wash and blend tomatoes and add onions with pepper.
3.　　Fry the blender onions, pepper and tomatoes with palm oil
4.　　Wash and cut the spinach and sorrel leaves
5.　　Add the leaves to fried paste and add stock and leave it to simmer for 30 minutes
6.　　Add soya beans with garlic and ginger seasoning
7.　　Serve with Towun Shinkafa

Table 1: Sample A1 Pepper Soup seasoned with Soyabeans and ginger

Variables	Average mean	Total Response
Taste	4.35	45
Aroma	4.33	45
Appearance	4.47	45
General acceptability	4.44	45

Source: Sensory Evaluation (2016)

The table above shows data from the taste of the fish pepper soup seasoned with soya bean and ginger. The result shows the taste is considered very good with average mean score of responses of 4.53. Aroma has an average mean score of 4.33 which is good while appearance and general acceptability have mean score of 4.33, and 4.44. The data above shows that the seasoning of soya beans and ginger is generally accepted.

Table 2: Sample A2, Pepper Soup Seasoned with Soyabeans and Garlic

Variables	Average mean	Total Response
Taste	3.27	45
Aroma	4.33	45
Appearance	4.47	45
General acceptability	4.01	45

Source: Sensory Evaluation (2016)

Data shown on the above table on the taste of the pepper soup using soya beans and garlic has average mean score of 3.27 which rates as poor. The aroma has 4.33 which is good. The appearance of the meal has a mean of 4.47 which is good. General acceptability is good with average mean score of 4.01.

Table 3: Sample A3, Pepper Soup Seasoned with Soyabeans, Ginger and Garlic

Variables	Average mean	Total Response
Taste	4.36	45
Aroma	4.67	45
Appearance	4.47	45
General acceptability	4.50	45

Source: Sensory Evaluation (2016)

The above table is pepper soup seasoned with soya beans, ginger and garlic. The results show good rating for taste with average mean score of 4.36. The aroma has very good rating with average mean score of 4.67. The appearance is good with average mean score of 4.47. While the general acceptability has average means score of 4.50 which is very good.

Table 4: Sample B1, Jollof rice seasoned with Soyabeans and Garlic

Variables	Average mean	Total Response
Taste	4.44	45
Aroma	4.56	45
Appearance	4.38	45
General acceptability	4.46	45

Source: Sensory Evaluation (2016)

Table 4 above is data for jollof rice seasoned with soya beans and garlic. The results show good rating for taste with average mean score of 4.44. The aroma has very good rating with average mean score of 4.56. The appearance is good with average mean score of 4.38. While the general acceptability has average means score of 4.46 which is very good.

Table 5: Sample B2, Jollof rice Seasoned with Soyabeans and Ginger

Variables	Average mean	Total Response
Taste	4.23	45
Aroma	3.45	45
Appearance	4.38	45
General acceptability	3.99	45

Source: Sensory Evaluation (2016)

The table above is data for jollof rice seasoned with soya beans and ginger. The results show good rating for taste with average mean score of 4.23. The aroma has fair rating with average mean score of 3.45. The appearance is good with average mean score of 4.38. While the general acceptability has average means score of 3.99 which is fair.

Table 6: Sample B3, Jollof rice seasoned with Soyabeans, Garlic and Ginger

Variables	Average mean	Total Response
Taste	4.44	45
Aroma	4.56	45
Appearance	4.38	45
General acceptability	4.67	45

Source: Sensory Evaluation (2016)

The above table presents data on Jollof Rice seasoned with soya bean and garlic. 45 respondents rated the aroma of the meal which consists the product to be very good with an average mean score of 4.56. The general acceptability has average mean score of 4.67 which is very good too. However, the taste results showed an average mean score of 4.44 which is good. The appearance of the sample is also good with an average mean score of 4.38. The product has a general acceptability according to the results shown above.

Table 7: Sample C1, Mixed Vegetable Soup and Pounded Yam with Soya bean and Ginger

Variables	Average mean	Total Response
Taste	4.29	45
Aroma	4.16	45
Appearance	4.29	45
General acceptability	4.21	45

Source: Sensory Evaluation (2016)

This table shows that Sample C which is mixed vegetable pounded yam seasoned with soya bean and ginger. This sample has combination of three ingredients. The taste of the sample has average mean score of 4.29 which is good. The aroma of the product was good with average response of 4.16. Appearance has average of 4.29 which translate to good rating. The general acceptability of the product is good with average mean of 4.21.

Table 8: Sample C2, Mixed Vegetable Soup and Pounded Yam with Soya bean and Garlic

Variables	Average mean	Total Response
Taste	3.29	45
Aroma	3.16	45
Appearance	4.29	45
General acceptability	3.57	45

Source: Sensory Evaluation (2016)

This table shows that Sample C which is mixed vegetable pounded yam seasoned with soya bean and garlic, this sample has combination of three ingredients. The taste of the sample has average mean score of 3.29 which is fair. The aroma of the product was fair with average response of 3.16. Appearance has average of 4.29 which translate to good rating. The general acceptability of the product is fair with average mean of 3.57.

Table 9: Sample C3, Mixed Vegetable Soup and Pounded Yam with Soya bean, Ginger and Garlic

Variables	Average mean	Total Response
Taste	4.29	45
Aroma	4.16	45
Appearance	4.29	45
General acceptability	4.21	45

Source: Sensory Evaluation (2016)

This table shows that Sample C which is mixed vegetable pounded yam seasoned with soya bean, ginger and garlic, this sample has combination of three ingredients. The taste of the sample has average mean score of 4.29 which is good. The aroma of the product was good with average response of 4.16. Appearance has average of 4.29 which translate to good rating. The general acceptability of the product is good with average mean of 4.21.

Table 10 Summary of Response

	N	Mean	Std. Deviation	Minimum	Maximum
Soya bean + ginger Product	135	4.2144	.34906	4.00	5.00
Soya bean+ garlic product	135	3.9911	.38787	3.35	5.00
Soya bean +ginger +garlic	135	4.4633	.47254	3.55	5.00

Source: Sensory Evaluation (2016)

This table presents the summary evaluation of the three products. The soya bean and ginger seasoning has mean score of 4.444 with SD = 0.34906; soya bean and garlic seasoning has average of 4.51 and standard deviation of 0.38787. Soya bean, ginger and garlic seasoning has mean of 4.283 and standard deviation of 0.47254. The data shows product made from soya beans and garlic have more acceptability than the one consisting soya beans, garlic and ginger.

Table 11: ANOVA (Likeness)

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.234	2	.617	3.736	.026
Within Groups	21.806	132	.165		
Total	23.040	134			

Source: Sensory Evaluation 2016

Table 8 above shows the results of One-Way ANOVA performed to test the relative acceptability of the three products from Soya Bean Composite seasonings. At $\alpha = 0.05$, F (3.736) P=0.026<0.05. Hence, the null hypothesis is rejected and the alternate is accepted. There is statistically significant difference among the three products from soya bean composite seasonings. The detailed explanation for this result is seen in the Multiple Comparisons in table 9.

Table 12: Multiple Comparisons

(I) Samples	(J) Samples	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Soya bean + ginger Pepper soup	Soya bean + ginger pepper soup	-.06667	.08569	.717	-.2698	.1364
	Soya bean + ginger + garlic pepper soup	.16111	.08569	.148	-.0420	.3642
Soya bean + garlic jollof rice	Soya bean + ginger jollof rice	.06667	.08569	.717	-.1364	.2698
	Soya bean + ginger + garlic jollof rice	.22778*	.08569	.024	.0247	.4309
Soya bean+ ginger + garlic mixed vegetables	Soya bean + ginger mixed vegetables	-.16111	.08569	.148	-.3642	.0420
	Soya bean + garlic mixed vegetables	-.22778*	.08569	.024	-.4309	-.0247
*. The mean difference is significant at the 0.05 level.						

From this table, it is noticed that the seasoning used in Soya bean + ginger Pepper soup differs from Soya bean + ginger pepper soup. Likewise suya beans + ginger pepper soup differs with Soya bean + ginger + garlic pepper soup at P = 0.717 and 0.148 > 0.05. Soya bean + garlic jollof rice differs with Soya bean + ginger jollof rice with P= 717>0.05. However soya beans + ginger jollof rice and Soya bean + ginger + garlic jollof rice seasoning shows no significant difference from soya bean – ginger – garlic seasoning at P = 0.024 < 0.05. Soya bean+ ginger + garlic mixed vegetables   and Soya bean + ginger mixed vegetables differs at P=0.148 while Soya bean+ ginger + garlic mixed vegetables and Soya bean + garlic mixed vegetables has no significant difference with P = 0.024 < 0.05.

Discussions
Findings of the study show favourable results on the three products produced. The study produced nine dishes seasoned by the products. Findings on the fish pepper soup which has three dishes made from suya beans and garlic, suya beans and ginger and suya beans, ginger and garlic gained acceptability. The taste of the meal with suya beans and ginger, likewise that of suya beans, ginger and garlic were rated high which shows the product is accepted. The second meal which is jollofrice cooked by the same products shows the taste of all the three samples accepted. The third meal which was mixed vegetable soup with pounded yam has the seasoning of suya beans and ginger, suya beans, ginger and garlic all rated very good and good

respectively, however the seasoning with suya beans and garlic has a fair acceptance of taste. Though the taste of the meal with suya beans and garlic season shows fair rating, the result still shows acceptability. This findings is in accordance with Connel (2006) which says that the taste of food in hospitality contexts plays not only a crucial part in adding to the total destination image and experience but also becomes the ideal symbol of food consumption. Taste tends to be a key consideration for most people in nearly all food and drinking settings and in the hospitality industry, Urry (2002).

Many have feeling of food being fresh due to its smell and they discovered it was fresher (Kivela and Crotts, 2006). The aroma derived from food is a motivation for eating of the particular food. Seasoning tends to contribute to food aroma and adds to choice of some certain types of seasoning used for cooking. The aroma of the pepper soup, jollof rice and the mixed vegetable soup were all accepted. Though the aroma for suya beans seasoning and garlic on the vegetable soup was rated fair. This could partly be because of some flavour that may not go well with some specific food as stated by Pollard *et al*, (1998) in their findings. The aroma acceptability of the sensory evaluation supports the findings of Kivela and Crotts (2006) which states that flavour was considered a basic standard for consumption of food and beverages.

On the appearance of the dishes, the fish pepper soup, jollof rice and the mixed vegetable soup with pounded yam all have good appearances. This can be partly due to presentation as stated by Fields (2002) which says many people do expect that food would be nice, but it was nice due to how it was presented. Furthermore, visual images of food such as food well displayed and cooking performance may play a key motivational role in providing sensory pleasure to people and the displays of food look nice and attractive. Other findings which support to food adding to sensory experience are that of Boniface (2002) and Urry (2003).

The general acceptability of the three types of seasoning on the three dishes shows that all dishes cooked with the soya bean enhanced seasoning were generally good and accepted. The taste, aroma and appearance of the dishes compare favorably as can be seen from tables 1 to 9. Considering the composition of the sensory evaluation panel drawn from the industry and institution, the implication of this finding is that soya bean seasoning enhanced with ginger and garlic could offer an excellent choice among the condiments in Nigerian cuisine. This is more so because of the nutritional and health benefits of ginger and garlic.

This supports the findings by Furst *et al*. (1996) which identified that sensory perceptions can play a crucial physiological and psychological part in appreciation of food. They further mentioned that sensory perceptions represent the considerations that people develop related to their taste in eating and drinking. In addition, taste can be a key consideration for most people in nearly all food and drinking settings. Furthermore, Kivela and Crotts (2006) emphasized that tasting local food and beverages are a kind of pleasurable sensory experience. Dann and Jacobsen (2002) suggested that people need for seeking sensory experience can be satisfied through the smell and taste of food, visual images of heritage buildings, and auditory cues from traditional music in a tourist destination. Food, including regional beverages, local cuisine and indigenous agricultural products, can be regarded as an attribute of reemphasis or re-discovery of sensory experience.

The relative acceptability of the three products from Soya Bean Composite seasonings are at $\alpha = 0.05$, $F (3.736)$ $P=0.026<0.05$. Hence, the null hypothesis is rejected and the alternate is

accepted. There is statistically significant difference among the three products from soya bean composite seasonings. Comparison of the three products on nine different dishes shows seasoning used in Soya bean + ginger Pepper soup differs from Soya bean + ginger pepper soup. Likewise suya beans + ginger pepper soup differs with Soya bean + ginger + garlic pepper soup at $P = 0.717$ and $0.148 > 0.05$. Soya bean + garlic jollof rice differs with Soya bean + ginger jollof rice with $P = 717 > 0.05$. However soya beans + ginger jollof rice and Soya bean + ginger + garlic jollof rice seasoning shows no significant difference from soya bean – ginger – garlic seasoning at $P = 0.024 < 0.05$. Soya bean+ ginger + garlic mixed vegetables and Soya bean + ginger mixed vegetables differs at $P = 0.148$ while Soya bean+ ginger + garlic mixed vegetables and Soya bean + garlic mixed vegetables has no significant difference with $P = 0.024 < 0.05$.

The study identified findings of different authors on this. Suya beans, garlic and ginger are used for treatment and control of diseases, cooking of meals, dressing of wounds, nutritional supplements, menopause regulation and flavor in meals. Ginger has been used to aid digestion and treat stomach upset, diarrhea, nausea, arthritis, colic, flatulence, motion sickness, morning sickness, painful menstrual periods, and the common cold (Ahmed and Sherma 1997; Surh, Kim, Liem, Lee, Miller, 1998). Garlic has been used as a remedy for many different ailments, including intestinal disorders, flatulence, worms, respiratory infections, skin diseases, wounds, and symptoms of aging. Modern research indicates that garlic may help improve heart health in a number of different ways. It helps to lower both high blood pressure and blood triglycerides. Garlic also has anti-inflammatory properties (Hammami and El-May, 2012; Adel and Prakash 2010; Lewis, 2015; Rakasi, 2011)

Conclusion

Soya bean, ginger and garlic can be used in various forms in cookery. They can be used as spices, condiments or seasonings. In this study they were processed and used as seasonings enhanced with ginger and garlic. Each of the seasonings was generally accepted. The findings of this study have economic implications; considering the ease of production, these seasonings could be produced for both family use and commercial purposes. It can also be used by those who wish to go on healthy diets. This is because it has opened up more avenues for exploiting the numerous health benefits of soya bean, ginger and garlic.

Recommendations

The acceptability of the ginger and garlic used in enhancing suya beans seasoning is a finding that is of benefit to numerous individuals and organizations. The study therefore recommends that:

i.   Families and hospitality enterprises should adopt and incorporate soya bean enhanced seasonings into their exquisite cuisine.

ii.   Those into healthy or natural dieting can replace the different seasonings used which contain chemicals with this natural and healthy product.

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