ORGANOLEPTIC AND ACCEPTABILITY ASSESSMENT OF SELECTED IMPROVED INDIGENOUS GHANAIAN DISHES

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ABSTRACT

Ghana is home to more than 70 different ethnic groups with distinct traditional indigenous recipes and dishes that spell out their cultural roots and identity, which have been handed down from generation to generation. However, there seems to be a reduction in the choice and consumption of these due to obsolete ingredients used in contact with foreign cultures, modernity, education, peer influence, convenience, time and method of preparation. Very little information can be found on improved indigenous Ghanaian dishes as most researchers in this field have focused on documenting the recipes rather than improving the existing ones to increase their acceptability and patronage hence this exploratory study. With a sample of 100 respondents, of Winneba community members using convenience and purposive techniques, quantitative and qualitative data were analysed using SPSS version 26 and presented using descriptive statistics. Findings revealed that all respondents (100%) were familiar with the original dishes but scored the improved dishes (Banku, Yakɛyakɛ, Mpɔtɔmpɔtɔ, Peewa, Ɛtɔ, Akankye3, Aky3k3) very high (75% - 95%) with regards to their appearance, aroma, taste, after taste, texture and overall acceptability during the sensory evaluation. A p-value ranging from 0.00 - 0.02 (p<.05) was obtained for all 5 null hypotheses, indicating a rejection of these null hypotheses for their alternate hypotheses. It is therefore concluded that adding other ingredients such as fish powder, soya flour, and assorted vegetables to the original recipes improves the dishes' sensory properties and increases their acceptability by consumers. It is recommended that homemakers, caterers, and chefs adopt improved recipes to bring variety to the diet of consumers while promoting and maintaining the Ghanaian food culture.

***Keywords**: Indigenous, Fortification, Food, Culture, Consumption, Preference*

INTRODUCTION

Culture has been described as the total way of life of a group of people and therefore encompasses religion, food, clothing, language, beliefs, norms, etc, transmitted through social learning in human societies may differ globally (Reddy & van Dam, 2022; Zimmermann, 2015). The essence of culture virtually lies largely in the way individuals put meals together since most aspects of culture involve food. Different regions' ingredients, flavours, and spices showcase their culture and bring to life the product of the place. Cooking methods and how people feed the population reflect deeply embedded traditions, beliefs, and habits (Voinea, et al, 2020; Reddy & van Dam, 2020). Indigenous traditional dishes have been found to contribute greatly to the preservation of cultural diversity of any given group of people (Laryea, et al. 2016; Hilgert, et al. 2013). Thus, one will not be far from right to allege that once the indigenous cuisines are highly modernised, they gradually lose their cultural significance, and the people may subtly lose their cultural identity. However, if this phenomenon is allowed to thrive, the coming generation may be totally lost when it comes to their cultural identity.

Food forms an integral part of human existence and significantly contributes to the improvement of all aspects of living as expressed through the cultural pattern of food consumption (Cembalo, 2015; Nikolić, 2014). By delving into Ghana's local cuisine, one can get to taste and experience their culture in the most exciting way. It is worth noting that, all indigenous traditional Ghanaian dishes are typically prepared from tropical crops harvested in this region and are highly nutritious. Grains like beans, corn, millet plantains, and tubers like cassava make up the base for most traditional dishes. According to Cobbah, et al, (2023) a smorgasbord of Ghanaian indigenous dishes prepared from the above-mentioned tropical food commodities such as *Dzobodzoboe, Lorxokple, Kɔrkli Dzogbor, Asanku*, *Nkyimhoo*, *Etuku*, *Epitsi*, *Peewa*, *Apranpransa*, *Akaw, Sawsaw, Nsihu, Akulo, Fɔ-yɛ-mi, Apra, Kumaku, Blɔ, Kpokpoi*, *Ɔgɔɔ*, *Ɛdibi*, *Mpɔtrokoma, Akankyeɛ, Ehuo, Alateawe, Ɛtɔ;* Y*oroyoro*, *Nyobeika* (typical local indigenous Ghanaian dishes without English names) are almost getting extinct.

The Ghanaian and for that matter West African cooking seems to be failing to stand its ground as it is giving way to foreign influence so easily. Traditional Ghanaian recipes seem to be finding it difficult to move from the local front to 'global cuisine' since this transition is quite complex and quite challenging. Media articles have questioned whether the reasons might be linked to "old-fashioned cooking and preservation techniques", limited marketing and customer-service practices, or discrimination among financial institutions (Gausi, 2008). The above has become an ongoing discourse. This notwithstanding, the need for further research in this area is highly recommended.

There has been an argument that (post) colonialism factors, among other reasons, have played a key role in influencing Ghanaians' mentality and attitudes about food and eating, especially in the early years of migration to the diaspora (Tuomainen, 2009). Research has proven that most modern natives do not have the desire to express their traditional foodways in public as they lack confidence in using cultural food as an expression of their ethnic identity. To explain the reason behind this phenomenon, Almerico, (2014); and Tuomainen, (2009), explain that, most Ghanaians' attitudes, knowledge, and consumption of traditional foods mostly do not depend on demographic factors such as age and education as it cut across ages and education status. A study by Penafiel, et al, (2016) discovered that other factors such as convenience, economic status, and

safety of traditional foods have been found to contribute to the low patronage and consumption of traditional foods. Admittedly, most indigenous traditional Ghanaian dishes are not easy and quick to prepare, and they are not convenient to handle when eating them.

There is a need to delve into finding out how the traditional dishes of Ghanaian origin could be made interesting enough to attract the rising generation without significantly altering its cultural attributes (Deaconu, et al. 2021). Though there are several research in on traditional foods in Ghana, most of these focus on chief ingredients for the preparation and recipes; therefore, there is limited information available on improved traditional dishes, and consumer perception of these improved traditional foods. There is no doubt, that consumer opinions change over time, hence, there is a need to consistently gather data to help food industries and food service operators meet consumer needs and expectations while preserving the cultural significance of the foods they prepare.

Undoubtedly, consumers are attracted to food and their decision to consume a particular food is highly influenced by the sensory attributes of the food (Risso, et al, 2017) while nutrient quality and food safety will come later. In this light, one is tempted to also presume that, if the sensory attributes of traditional indigenous foods are improved by the addition of other modern ingredients, consumption rate and acceptability may increase, and it is against this background that this study was conducted.

Globalisation has resulted in increased consumption of foreign rice, oats, wheat, potatoes, and other foods infused into Ghanaian cuisine (Simpson, 2022; Omari, et al., 2013 & Quaye, 2010). This seems to explain the reason for the seeming reduction in the choice and consumption of indigenous traditional Ghanaian dishes. Other factors that may influence the acceptability and consumption of local indigenous foods may include the unavailability of ingredients used and the sensory characteristics (colour, taste, texture), contact with foreign culture, modernity, education, peer influence, convenience, time and method of preparation (Cobbah, et al., 2023; Adanse, et al, 2017)

According to Tuomainen (2009), most Ghanaians and, for that matter, Africans lack confidence in using their indigenous food to portray their cultural identity, especially in public. It is not surprising to see more people opting for foreign/modernised dishes than those opting for local cuisine during social functions in Ghana. Consequently, there is little or no information on improved indigenous Ghanaian dishes, as most researchers in this field have focused on documenting the recipes rather than improving the existing ones to increase their acceptability and patronage. The researchers are of a firm believe that improving the sensory characteristics of some selected indigenous Ghanaian foods would make them more appealing and gradually draw the attention of the rising generation to redevelop their love for indigenous traditional dishes and prevent them from going extinct; hence the essence of this study.

The study aimed to explore the organoleptic and acceptability assessment of improved selected indigenous Ghanaian dishes. Specifically, the objectives of the study are to: explore respondents' familiarity with the selected indigenous Ghanaian dishes; examine the organoleptic attributes of the improved selected indigenous Ghanaian dishes in terms of appearance, taste, aroma, and texture, and establish the level of acceptability of the improved selected indigenous Ghanaian dishes. This study also serves as documentation for reference for future researchers.

METHODOLOGY

The research design employed for the study was a descriptive survey with the aim of ascertaining respondents' familiarity with the selected indigenous Ghanaian dishes and the acceptability of the improved version. The study sought to gather informative data that will enable researchers to make informed recommendations regarding promoting indigenous cuisines (Bhattacherjee, 2012; De Vaus, 2001). A quantitative approach was employed since Salkind (2003) stressed that quantitative research is preferable when there are statistical analyses involved. Additionally, quantification was necessary to make observations more explicit, and the presence of numbers made it easier for readers to understand and interpret (Creswell & Creswell, 2017).

The multistage sampling strategy was used as Bryman (2016), indicates that the multistage sampling approach is cost-effective, time-effective, adaptable, aids in sample selection, and is excellent for gathering primary data from an unknown sampling frame Potential respondents were first asked a few questions to gauge their familiarity and whether they were willing to complete a set of questionnaires on products displayed. Correct answers to the few posed questions qualified one to participate in the study. A total of 100 respondents were randomly sampled from the participants of the Annual Recipe Development Exhibition of Indigenous dishes, organized by the Department of Integrated Home Economics, of the University of Education, Winneba-Ghana, for familiarity. This was considered adequate to produce robust estimates because Tabachnick & Fidell (2019) had prescribed a minimum sample of 50 for computing robust estimates adequately. Out of the 100 respondents, 30 were selected for the sensory evaluation to determine acceptability.

A Self-develop semi-structured Questionnaire incorporating a 3-point Likert scale was used to collect data on the familiarity of selected indigenous Ghanaian dishes and A 5-point hedonic scale was used to collect data on the sensory attributes of the improved ones in terms of their taste, appearance, aroma, colour texture and overall acceptability for the sensory evaluation. Respondents were trained on sensory evaluation after which coded samples were given out for evaluation. Cut cucumbers and water were given to respondents after each sensory evaluation to wash their mouths after each coded sample. Sensory evaluations were done in individual sensory booths in the Food Laboratory of the Department of Food and Nutrition of the University of Education, Winneba. The sensory evaluation took about 45 minutes for the entire exercise.

Data analysis

The data generated from the study was analysed by the SPSS version 24 to assist in identifying the described patterns present. Data was coded and analysed descriptively.

Samples Preparation

Preparation of the control samples (original recipes for the selected dishes) was adopted from Amerteifio (1969) while the improved samples were prepared by adapting the original recipes but adding other ingredients absent in the original dishes to improve their sensory qualities. All ingredients were purchased from the main Winneba market. A 30-member panel participated in the sensory evaluation. The recipes for both the control and the improved dishes are presented in Table I.

Table I. Recipes and methods of preparation of control and improved dishes

ƐTↃ			
Ingredients (Control)	**Method (Control)**	**Ingredients (Improved)**	**Method (Improved)**
- 500g Under-ripe plantain (peeled) - 3Med scotch bonnet pepper -¼ cup Palm oil - 1 Med onion - 2 hard-boiled eggs - A pinch of salt	- Wash and boil plantain until they are cooked, about 10-15 minutes. - Grind pepper, ½ of the onion, and a pinch of salt into a puree. - Add boiled plantain to the mixture and mash to the desired texture. - Fry the remaining onion moderately in the palm oil. - Add the oil to the mixture and mix until evenly distributed. - Garnish with hard-boiled eggs and serve.	- 500g Under-ripe plantain (peeled) - 1Med scotch bonnet pepper - ¼Cup palm oil, - 1Med onion - 2Hard-boiled eggs - ¼Cup roasted peanuts - 2Stalks spring onions - 1Med avocado pear - 2Med carrots - 1Med green bell pepper - A pinch of salt	- Wash and boil plantain until they're cooked, about 10-15 minutes. - Grind pepper, ½ of the onion, some groundnuts, and a pinch of salt into a puree. - Add boiled plantain to the mixture and mash to the desired texture. - Fry the remaining onion moderately in the palm oil. - Add the oil to the mixture and mix until evenly distributed. - Wash, chop, and mix vegetables with the Ɛto. - Garnish with pear, sliced eggs, and groundnut and serve.
BANKU			
-200g Corn dough -100g Cassava dough -1000ml Water Salt to taste	- Blend the corn and cassava dough until smooth, add salt to taste then transfer to high heat and stir continuously until solid and firm. - Reduce heat and allow the *Banku* to cook in a covered pot for 5-10	-150g Corn dough -100g Cassava dough - 50g Soy flour - 1000ml Water - 250ml Carrot	- Blend the soy flour, corn, and cassava dough until smooth, then transfer to high heat and stir continuously until solid and firm. - Add the carrot juice to the *Banku* and stir till uniformly mixed. - Reduce heat and allow the *Banku* to cook in a covered

	minutes. - Stir and scoop into moulds and serve.	juice	pot for 5-10 minutes. - Stir and scoop into moulds and serve.
APAPRANSA			
- 500g Roasted cornmeal - 1000ml Palmnut soup - Salt to taste	- Bring the Palmnut soup to a boil and fetch half aside. - Stir in the roasted cornmeal till a lump-free mixture is obtained. - Add the remaining soup, stir, and allow to cook for about 10 minutes. Correct seasoning. - Scoop and serve.	- 450g Roasted cornmeal - 50g soy flour - 1250ml Palmnut soup - 100g Boiled Beans (red) -100g Chopped Carrots - 2 Med crabs (boiled) - 2 Hard-boiled eggs (chopped)	- Bring the Palmnut soup to a boil and fetch half aside. - Stir in the roasted cornmeal and soy flour till a lump-free mixture is obtained. - Add the remaining soup and cooked beans; stir and allow to cook for about 10 minutes. - Stir in the chopped carrots and hard-boiled eggs. - Correct seasoning. - Scoop, garnish with the boiled crabs, and serve.
YAKƐYAKƐ			
-2Tuber cassava -1tbs Corn flour -Salt to taste	- Cut cassava into smaller sizes into a bowl and soak in water overnight. - Grate the cassava and pound in a mortar till mashed. - Squeeze out the juice from the cassava till leather-dry using a clean cheesecloth. - Pass the dried chaff through a mesh strainer - Stir in the corn flour and salt. - Steam in sizeable portions and serve when done.	- 2Tuber cassava - 1tbs Corn flour - 50g Chopped carrots - 100g Tuna flakes - Salt to taste	- Cut cassava into smaller sizes into a bowl and soak in water overnight. - Grate the cassava and pound in a mortar till mashed. - Squeeze out the juice from the cassava till leather-dry using a clean cheesecloth. - Pass the dried cassava through a mesh strainer. - Stir in the corn flour, chopped carrots, tuna flakes and salt. - Steam in sizeable portions and serve when done.

AKYƐKƐ			
- 2 Med tubers of Cassava - 1tsp Salt to taste	- Peel, wash, and grate cassava. - Squeeze excess juice and pass through a mesh to loosen the lumps and set it to dry in an airy place for about an hour. - Pour the dried grated cassava onto the splatter guard and stir continuously to avoid lumps while it cooks by steaming. - Serve with grilled tilapia and fried plantain with a pepper sauce.	- 2 Med tubers of cassava - 50g Chopped carrots - 1Med red, green, and yellow pimentos (chopped) - 100g Tuna flakes - 1tsp Salt to taste - 1 Med avocado pear	- Peel, wash, and grate cassava. - Squeeze excess juice and pass through a mesh to loosen the lumps and set it to dry in an airy place for about an hour. - Pour the dried grated cassava onto the splatter guard and stir continuously to avoid lumps while it cooks by steaming for about 15 minutes. - Stir in the tuna flakes and chopped vegetables. - Garnish with avocado pear and serve with fried plantain and tomato or pepper sauce.
PEEWA			
- 200g Corn grits - Salt to taste - 1Med Onions (chopped) - 1500ml Water - 125ml Coconut oil	- Fry onion lightly in the coconut oil and wash the corn grits, strain, and add to the oil on fire. - Add the water, salt to taste and allow to boil till the grains absorb all the liquid under moderate heat. - Stir vigorously as in the preparation of *Banku.* - Cover for about 5 minutes under low heat. - Continue to stir till soft and well cooked. - Serve hot with pepper sauce	- 200g Corn grits - 500ml water -1000ml Coconut milk - 50ml Coconut oil - Salt to taste - 1Med Onions (chopped) - 100g Salted beef (diced) -1Med red, green, and yellow pimentos (chopped)	- Fry diced salted beef and onion lightly in the coconut oil and wash the corn grits, strain, and add to the oil on fire. - Add the water, coconut milk, salt to taste and allow to boil till the grains absorb all the liquid under moderate heat. - Stir vigorously for a smooth lump-free consistency. - Cover for about 5 minutes under low heat. - Continue to stir till soft and well cooked. - Stir in chopped vegetables and serve hot with beef sauce.

RESULTS AND DISCUSSION

Familiarity of respondents with the selected indigenous Ghanaian dishes

The researchers wanted to ascertain the level of familiarity of the respondents with the selected indigenous dishes. Hence, respondents were to indicate their level of familiarity with each of the sample dishes presented by answering a few questions to help achieve the first objective of the study. Thus, multiple responses were generated and are presented in Fig. I.

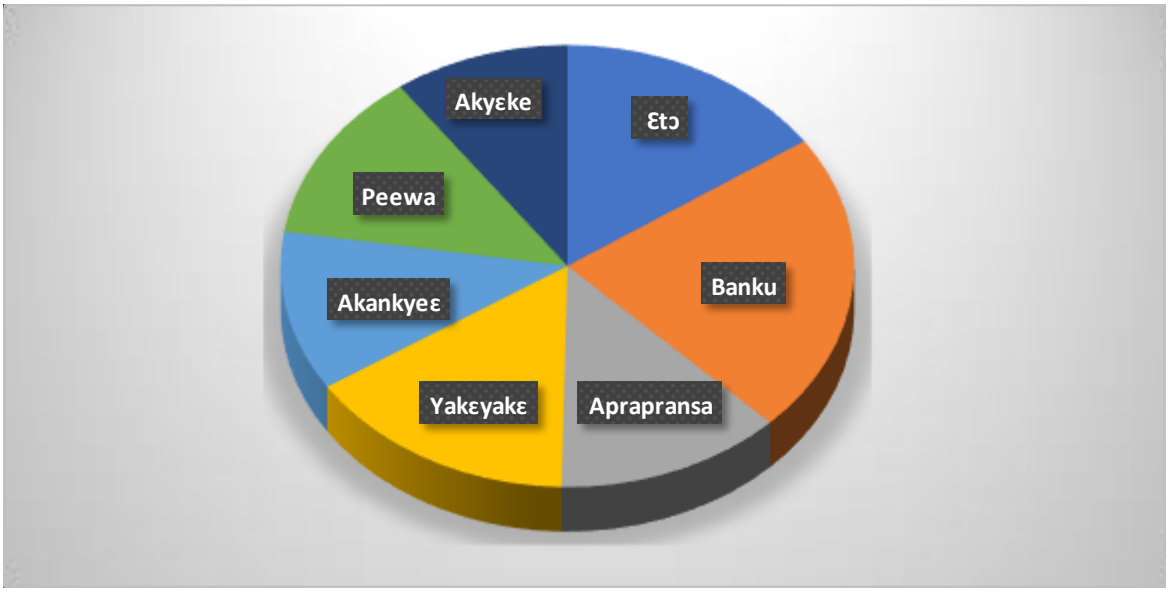

Fig. I: Familiarity with dishes

Key: Ɛtɔ 54(14%), Banku 100 (22%), Aprapransa 58(13%), Yakɛyakɛ 70 (16%), Akankyeɛ 53 (12%), Peewa 57 (13%), Akyɛkɛ 45(10%).

From Fig. I, all respondents (100) constituting 22% were familiar with Banku, 58 (13%) were familiar with *Aprapransa* and 70 (16%) were familiar with *Yakɛyakɛ*. Again, (53) 12% of the respondents were familiar with *Akankyeɛ*, as 58(13%) knew about *Peewa* and *Akyɛkɛ*, a delicacy among the people of the western region known by only 45(10%) of the respondents. This study partly confirms Laryea, et al, (2016)'s study that established that awareness of and consumption of traditional cuisines are mostly unrelated to demographic parameters like age and education. Food cuisine has a distinctive regional characteristic (Nummedal & Hall, 2006) because locally produced and their ingredients are locally grown. Knowing a particular dish and being quite familiar with it can influence your decision to accept, prefer, and consume it (Mielmann, et al, 2022). Traditional food can be differentiated from non-local products in terms of their distinct product characteristics, social features, and ecological features (Sage, 2003). Banku is eaten daily in almost all households across the country by all ages, gender, social and economic statuses It is obvious from Fig. 1 that, *Banku* is the most popular among all respondents and that may explain why it is not among dishes that are endangered in Ghana (Cobbah, et al, 2023). It is served during most social gatherings and is a popular choice for Ghanaians from restaurants and other eateries as they are easily eaten traditionally with hands (Edwards et al, 2006; Haard, 1999).

Though *Banku* is chiefly carbohydrate by its chief ingredients the main dish that it accompanies compliments it and makes it acceptable to all who consume it. Familiarity with dishes like *Yakɛyakɛ*, *Akankyeɛ*, *Peewa*, and *Akyɛkɛ* was low because they are dishes that are peculiar to specific ethnic groups in Ghana hence those who were familiar are likely either natives or residents of the area. It is therefore no surprise that the food industry is investing in increasing awareness and familiarity with food to increase sales (Wendin, & Nyberg, 2021). Awareness and familiarity can influence consumers' choice of food and subsequently consume it. Therefore, increasing consumer familiarity or awareness of known foods can surely increase their acceptability and patronage, thereby, preventing the extinction of these dishes (Choe, & Hong, 2018).

Organoleptic Assessment

The organoleptic assessment and the acceptability of the control and the improved dishes were done to be able to aptly describe the sensory characteristics of the improved indigenous dishes using a 5-point hedonic sale. The parameters to be assesses included appearance (colour) taste, texture, and aroma. The parameters were scored with the 5-point hedonic scale where 5 = like extremely, 4 = like, 3= neutral, 2= dislike slightly and 1 dislike extremely. Table II presents the mean scores of each parameter for the 30 assessors for both the control and the improved dishes for the organoleptic parameters and the consumer acceptability.

Table II: Organoleptic Assessment and Acceptability of Samples

DISHES	APPEARANCE	TASTE	TEXTURE	AROMA	ACCEPTABILITY
ƐTↃ	(1.3) 4.4	(1.2) 3.8	(1.3) 3.8	(2.1) 3.7	(1.3)4.0
BANKU	(2.5) 3.4	(2.2) 3.2	(3.6) 3.7	(1.8) 3.7	(2.2)3.6
APRAPRANSA	(2.2) 3.5	(2.0) 3.3	(1.8) 3.8	(2.2) 3.5	(1.3)3.5
YAKƐYAKƐ	(1.7) 3.6	(1.1) 3.4	(1.5) 4.1	(1.2) 3.5	(1.1)3.6
AKANKYE3	(1.9) 4.3	(1.3) 3.5	(1.6) 4.9	(1.3) 4.8	(2.0)4.9
PEEWA	(1.3) 3.1	(1.0) 3.3	(1.7) 3.7	(1.3) 3.1	(1.2)4.5
AKYƐKƐ	(1.5) 4.3	(1.8) 3.9	(2.0) 4.3	(1.4) 3.9	(2.8)4.8
OVERALL ACCEPTABILITY					**(1.7)4.1**

Key: 5=like extremely, *4=like, 3= neutral, 2= dislike slightly and 1 dislike extremely*

NOTE: *Figures in parenthesis are the mean values of the original dishes while the other values are the means of the improved dishes.*

Table II describes the organoleptic characteristics of the original dishes presented in parenthesis and the improved recipes. It was established that the appearance, taste, texture, and aroma of all the improved dishes were liked as compared to that of the control.

A t-test conducted revealed a statistically significant difference in all the sensory attributes (taste, aroma, appearance, and texture) as well as the overall acceptability of the fortified and original dishes. The tested hypotheses indicated that the average P-values obtained for each of the dishes in terms of taste, aroma, appearance, and texture ranged from 0.00 – 0.02 which is less than 0.5, hence: $H_0$1: There is a statistically significant difference in the taste of the original and improved dishes. $H_0$2: The aroma of the original and enhanced dishes differs significantly. $H_0$3: The visual (appearance) differences between the original and enhanced dishes are statistically significant. $H_0$4: There is a statistically significant difference in the texture of the original and improved dishes.

The decision of the consumer's choice of preferred food or dish is primarily influenced by the sensory qualities of food, including flavour, texture, and appearance (Wendin, & Nyberg, 2021; Kostyra et al., 2016). This assertion seems to confirm the findings of this study as all the dishes were improved in colour/appearance, taste, aroma, and texture and these were the very parameters that the assessors scored higher as against the original dishes they are familiar with.

The results allude to the fact that, although culture is a key factor in consumers' choice of food products (Risso, et al, 2017; Atzingen, & Pinto e Silva, 2010), improving the organoleptic characteristics of deeply rooted culturally inherent foods can still influence consumers' decision to choose to consume the food. It must therefore be the goal of all chefs, cooks, and home-makers to improve the organoleptic characteristics of the dishes they prepare and serve. As these characteristics are improved, they go a long way to also improve the nutritive value of the food as the additional ingredients are nutrient-dense.

The mean scores for the acceptability of the dishes from Table I indicate that none of the improved dishes was scored below 3 for acceptability by the assessors. This means that consumers accepted the fortified dishes and would be willing to consume them when made available. The t-test result on the null hypothesis $H_0$5: There is no statistically significant difference in the overall acceptability of the original and improved dishes was rejected and the alternate was accepted as there was a statistically significant difference in the overall acceptability of the original and improved dishes with a P-value of 0.01 which is less than 0.05.

These findings are in line with Mosca, et al. (2015), who opined that consumer acceptability is influenced by the tendency of the food to satisfy customer expectations and needs. In other words, when consumers' expectations are satisfied, consumers are more likely to accept the food. This finding was corroborated by Maina (2018) who further explains that food is accepted for consumption not only for the nutritive value but also to satisfy the need for enjoyment (the 'feel good factor'). The sensory characteristics such as colour or appearance, taste, texture, and aroma all contribute to the enjoyment of the food. In the same vein, Kim, et al, (2016) opines that consumers are more likely to embrace foods that fulfil their desire for enjoyment rather than those perceived as less flavourful or tasty. Hence the sensory characteristics of food can highly influence the overall acceptability of a particular food product (dos Santos Rocha, et al, 2022; Mihafu, et al, 2020; Prescott, & Bell, 1995).

CONCLUSION

All the respondents sampled for the sensory evaluation were familiar with the original dishes but scored the improved dishes higher regarding the appearance, aroma, taste, texture, and overall acceptability during the sensory evaluation. Furthermore, the researchers conclude that adding other ingredients such as soy flour, fish powder or flakes, and assorted vegetables to the original indigenous recipes improves the dishes' sensory properties and increases their acceptability by consumers.

RECOMMENDATIONS

Home Economics Teachers and students, homemakers, caterers, and chefs could adopt the improved recipes to bring variety to the diet of consumers while promoting and maintaining the Ghanaian food culture. Schools and other organisations in the food industry must organise exhibitions of fortified indigenous dishes regularly to increase their familiarity with the public.

Secondly, the nutritive value of indigenous Ghanaian dishes can be improved by adding extra ingredients for fortification by homemakers and chefs, caterers, etc. This is essential because fortified foods are healthier and can equally meet the enjoyment derived from food products by the consumers.

Finally, all individuals and organisations in the food industry must aim at increasing the enjoyment component of the food products they manufacture or produce while improving the sensory characteristics of their new products since these remain the driving factors for food acceptability.

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