

Palm Weevil Larva (*Rhynchophorus ferrugineus*) Consumption as Supplement of Human Protein in the Diets of Inhabitants of Bayelsa State, Nigeria

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ABSTRACT

*This study is conducted to ascertain the level of acceptability of palm weevil larva (*Rhynchophorus ferrugineus*) as meat as well as protein supplement in the diets of the inhabitants of Bayelsa State. The study's population comprises all the inhabitants of the eight Local Government Areas of Bayelsa State, while the study sample size comprises 320 respondents. A structure questionnaire entitled "Palm Weevil Larva Meat Questionnaire (PWLMQ)" was used to elicit information for the study. Forty respondents were randomly selected from 5 communities in each local government area. Data collected were analyzed using arithmetic mean and percentage. The study reveals that the inhabitants of Bayelsa State accepted and cherished eating the palm weevil larva as meat. While some people preferred eating the cooked grub but significant others cherished when fried. Since the grub would be of great benefit to the livestock industry that the production of the grub should be encouraged and the people of Bayelsa State enlightened on the production and consumption of the grub as meat to augment the shortage of human protein in the diet of the people in the study area.*

Keywords: *Palm Weevil Larva, Meat, *Rhynchophorus ferrugineus*, animal protein*

INTRODUCTION

Historically, the early men derived protein by hunting game using crude implements and engaged in fishing using stone made spears. But as human population increased, man saw reasons to domesticate some animals to meet the protein (meat) demand of the burgeoning population. Conventional animals domesticated from time immemorial till date include swine, cattle, sheep, goat, poultry and the likes. Still man is not satisfied with the available human protein sources in his diet. Thus, modern agriculture assigned the animal scientists the obligation of improving animal

production to satisfy the global meat demand (FAO, 2011). In an attempt to improve human protein intake by man, Animal scientists are diversifying on the domestication and commercialization of non-conventional animals such as grasscutter, snails, antelope, zebra and other mini-livestocks. Considering the environmental hazards already created by large livestock on massive scale production, the livestock industries are devising means to ameliorate the hazards by introducing alternatives to conventional animals with less production cost and provide cheaper and better animal protein supply. Thus the current trend is on the insect world (FAO, 2012).

In Bayelsa State of Nigeria, the insects that serve as delicacies to both the rural dwellers and the city dwellers are in the order of *coleoptera* (the beetles). These are the *Rhynchophorus spp* and the *Oryctes spp*, commonly known as “Bayelsa Suya” or “Maggot meat”. The *Rhynchophorus ferrugineus* is the most common and edible species of the palm weevils in the southern part of Nigeria including Bayelsa State. The palm weevil exhibits complete metamorphosis. That is, the eggs laid by the adult female, develops into larva stage and the larva develops into the pupa which metamorphosed into an adult that continues the life cycle (Alrouechidi, 2003). In the life cycle of this insect, it is at the larva stage that it serves as a delicacy (Omotoso and Adedire, 2007). The palm weevil larva which is also known as grub is harvested from palm trees infested by the adult palm weevil, which lays her eggs in the tree via natural openings or injuries.

After the palm weevil larvae (grubs) are harvested from their host palm tree, they are either eaten raw (fresh) or cooked. The cooking process is easy as only salt and pepper are used as recipes. It need no oil because the fat content of the grub is enough to grill (stew) it up. Other processing/preparation methods include roasting, frying, smoking, stewing, and so on. Processed grubs are dressed on skewers for a certain amount/price and are sold in local markets, motor parks and by the sides of major roads leading into and outside Bayelsa State. Bayelsans eat the palm weevil larva as meat amidst varieties of meat from different species of animals for reasons ranging from its nutty flavour, oily/fatty nature, nutrient content, taste, its tender meat nature, among many others. It is against this background that this study is conducted to determine the consumption level of the grub by the inhabitants of Bayelsa State in the inclusion of palm weevil larva in their choice of variety of meat in the locality.

MATERIALS AND METHOD

This study is carried out in Bayelsa State which is one of the 6 States in the south-south geo-political zones of Nigeria located in the Niger Delta region. It lies within the rainforest zone which favours the reproductive and productive lives of insects. The study was conducted using a survey method. It was designed to cover the eight Local Government Areas of Bayelsa State. Five communities were randomly

selected from each of the Local Government Areas. The instrument for data collection was a structured close-ended questionnaire entitled “Palm Weevil Larva Meat Questionnaire (PWLMQ).” The PWLMQ was prepared based on the objectives of the study and it was pre-tested and validated. A total of 320 copies of questionnaire were administered and retrieved. That is 40 copies of questionnaire were allotted to each of the LGAs in the state and 8 respondents were randomly picked from each of the 5 communities that were also randomly selected from each Local Government Area.

Data collected were analyzed using arithmetic mean and percentage. A 4-point Likert-type rating scale of strongly agree to strongly disagree was used to elicit relevant information from the respondents. In order to make decision on the findings, 2.5 was calculated and chosen as mid-point. This implies therefore that any item statement with mean score of equal to or less than 2.50 was accepted. And a mean score greater than 2.50 implies rejection.

RESULTS AND DISCUSSION

The study reveals that the grub is locally called “*Dov*” or “*Kolo*” and commonly known as “Bayelsa Suya.” The grub was accepted as meat by the inhabitants of Bayelsa State ($M = 2.00$). They like eating the grub always ($M = 2.13$) and when available ($M = 1.91$). They prefer eating the grub cooked ($M = 2.14$), as against it at the raw state ($M = 2.88$) and preferred the fried grub most ($M = 1.85$) with moderate acceptability of the toasted grub ($M = 2.28$). The people of Bayelsa State also cherished the meat for its taste ($M = 1.85$), meat texture ($M = 2.28$) and flavour ($M = 2.12$). This love for the meat (grub) by Bayelsans is in tune with May, (1984) who notes that the larva is a very sweet, tender meat nature with it slightly nutty flavour.

The people of Bayelsa also cherished the grub for its nutrient ($M = 1.90$) and like it for its oily nature ($M = 2.28$) probably as reported by Mercer, (1994). Mercer (1994) reported studies for result on nutritional analysis of *R. ferrugineus* larva as containing energy value 760.2 kilojoules per 100g, protein 6.1%, fat 13.19%, carbohydrate 90% iron 4.5mg/100g, thiamine 0.08g/100g, riboflavin 0.43mg/100, niacin 2.4mg/100g and calcium 461mg/100g. The calcium is four times as high as that for any other meat tested. This study also reveals that despite the fact that the grub is a delicacy in Bayelsa, it was not however preferred to other conventional meat with a mean score of 2.98. Thus the study indicates the percentage of people that preferred the grub to other conventional meat to be 24.57% and the remaining 75.43% preferred other conventional meat to the grub.

Table 1: Level of Consumption of Palm Weevil larva (*Rhynchophorus ferrugineus*) as meat supplement in Bayelsa State

S/N	Item	Mean Score	Decision
1.	You cherish eating the grub as meat	2.00	Accepted
2.	You like eating the grub always	2.13	Accepted
3.	You eat the grub only when available	1.91	Accepted
4.	You eat grub occasionally	2.22	Accepted
5.	You like eating the grub cooked	2.14	Accepted
6.	You like eating the grub raw	2.88	Rejected
7.	You like the grub fried	1.85	Accepted
8.	You like eating the grub toasted	2.07	Accepted
9.	You cherish the meat for its taste	1.85	Accepted
10.	You eat it for its tender meat	2.28	Accepted
11.	You cherish the grub for its nutrient	1.90	Accepted
12.	You eat the grub for its flavour	2.12	Accepted
13.	You like the grub for its oily nature	2.28	Accepted
14.	You therefore accept the (grub as meat to be eaten) always	2.00	Accepted
15.	You cherish eating the grub more than other conventional meat	2.98	Rejected

Source: Fieldwork, 2012.

CONCLUSION

This study explored Palm Weevil Larva (*Rhynchophorus ferrugineus*) Consumption as Supplement for Human Protein in the Diets of Inhabitants of Bayelsa State, Nigeria. The results show that palm weevil larva was accepted and cherished as a delicacy by the inhabitants of Bayelsa State. And this was due to the simplicity of the preparation of the grub, taste and texture of the meat, its flavour and nutrient content. Thus it would be of great benefit to the livestock industry that the production of the grub should be encouraged and the people of Bayelsa State enlightened on the production and consumption of the grub as meat to augment the shortage of animal protein in the diet of the people. In the same vein, farmers and entomologists should desire means to culture these weevils in artificial medium to enhance massive production/commercialization and possible exportation from Bayelsa State to other parts of the country.

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