



## AN ASSESSMENT OF THE PERCEPTION OF FARMERS ON COCOA POD HUSK FERTILIZER IN CROSS RIVER STATE, NIGERIA

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### ABSTRACT

In Nigeria, there has always been a problem of inorganic fertilizer scarcity among farmers especially during the planting season. In order to solve this problem, cocoa pod husk based compost was developed for use on cocoa. Being a new technology, the perception of cocoa farmers on this organic fertilizer was assessed which is the aim of this study. The study was carried out in Cross River State, Nigeria. Three cocoa producing Local Government Areas (LGAs) namely; Etung, Ikom and Boki were purposively selected and 72 cocoa farmers were purposively, randomly selected for the study. Information was collected from the respondents with the aid of structured questionnaire and the data collected were analyzed with the use of descriptive statistics as well as correlation analysis. The result of the descriptive analysis showed that 94.0% of the total respondents agreed that the organic fertilizer is good. Correlation analysis showed that age of farmers ( $p < 0.05$ ), farmers' educational level ( $p < 0.01$ ) and association membership of farmers ( $p < 0.05$ ) were strongly correlated with the perception of farmers on cocoa pod husk fertilizer. The study recommended that the financial capability of the farmers should be strengthened by way of giving them soft loan facility for them to successfully practice the technology.

**Keywords:** Nigerian farmers, cocoa pod husk fertilizer, organic fertilizer, perception, assessment.

### INTRODUCTION

The soil nutrients in cocoa plantations are being mined annually via cocoa harvest. Omotoso (1975) reported that a crop of 1000kg dry cocoa beans removed about 20kg Nitrogen, 4kg Phosphorus and 10kg Potassium from the soil. Ogunlade and Aikpokpodion (2006) in an assessment of soil nutrient status of cocoa plantations across cocoa ecologies of Nigeria observed that phosphorus is grossly inadequate for optimum cocoa yield. Fertilizer application is inevitable for the replacement of soil nutrients that are being mined through cocoa pod harvest annually.

Ogunlade *et al* (2009) reported that more than 70% of cocoa farmers in Nigeria do not use fertilizer for cocoa production. In a similar survey, Agbeniyi *et al.*, (2010) observed that more than 95% of cocoa farmers in Cross-River State, Nigeria do not use fertilizer for cocoa. One of the major reasons given for the non-utilization of fertilizer was due to its scarcity. The non-utilization of fertilizer on cocoa by cocoa farmers in spite of the soil nutrient depletion brought about the introduction of cocoa pod husk based compost to cocoa farmers in Cross-River State, Nigeria.

The objective of this study is to assess farmers' perception on the use of cocoa pod husk based fertilizer shortly after the farmer's participatory application of cocoa pod husk based compost on mature cocoa trees in some selected cocoa farms in Cross-River State, Nigeria.

### METHODOLOGY

The study was carried out in Cross River State, Nigeria. Cross River State is one of the cocoa producing states in Nigeria. Multi-stage sampling technique was used to select 72 cocoa producing farmers from the study area. The first stage involved a purposive selection of three

cocoa producing Local Government Areas (LGAs) in the State.

The selected LGAs were Etung, Ikom and Boki. The second stage involved the random selection of one community from each of the selected LGAs while the third (last) stage involved a random selection of 72 cocoa farmers from the selected communities. All the selected farmers were involved in all the stages involved in the production of the fertilizer (cocoa pod husk fertilizer). The stages involved were: gathering of the component materials, chopping and mixing together of the component materials, composting of the mixed materials, periodic turning and watering of the composting materials, drying of the compost and finally, the application of the dried compost (cocoa pod husk fertilizer) on cocoa trees. At the end of the whole processes, information was collected from the participating farmers on their perception on the fertilizer and the data collected were analyzed with the use of descriptive statistics (such as frequency and percentages) as well as correlation analysis. Correlation analysis was used to analyze the relationship between some socio-economic variables of the farmers and the farmers' perception on cocoa pod husk fertilizer.

### Hypothesis testing

**H<sub>0</sub>:** There is no significant relationship between the farmers' perception and the farmers' socioeconomic characteristics.

**H<sub>1</sub>:** There is significant relationship between the farmers' perception and the farmers' socio-economic characteristics.



## RESULTS AND DISCUSSIONS

The socio-economic characteristics of the farmers in Table-1 showed that 76.5% of the respondents had the age 60 years and below, while 23.5% of the respondents had the age greater than 60 years. Hence, the substantial proportions of the farmers are still in the active productive age. This is a good index to improved productivity as farmers' productivity decreases as the farmers are ageing (Oluoyole and Adeogun, 2005).

**Table-1.** Socio-economic characteristics of the farmers.

Variable	Frequency	Percentage
<b>Age of farmers (years)</b>		
≤ 30	9	12.50
31 - 40	10	13.90
41 - 50	22	30.60
51 - 60	14	19.50
61 - 70	11	15.30
> 70	6	8.20
<b>Total</b>	<b>72</b>	<b>100.00</b>
<b>Level of education</b>		
No formal education	8	11.11
Primary education	31	43.06
Secondary education	23	31.94
Tertiary education	10	13.89
<b>Total</b>	<b>72</b>	<b>100.00</b>
<b>Household size</b>		
1 - 5	18	25.00
6 - 10	31	43.10
> 10	23	31.90
<b>Total</b>	<b>72</b>	<b>100.00</b>
<b>Farm size (ha)</b>		
1 - 5	31	43.10
6 - 10	13	18.10
> 10	28	38.80
<b>Total</b>	<b>72</b>	<b>100.00</b>
<b>Variety of cocoa planted</b>		
Amelonado	1	1.39
Amazon	40	55.56
Amazon + Amelonado	31	43.06
<b>Total</b>	<b>72</b>	<b>100.00</b>

Source: Field survey, 2009.

Table-1 also showed that the majority (88.9%) of the respondent farmers had formal education, while just 11.11% did not have. The implication of the findings is that farmers' productivity increases as the level of education of the farmers increases. This is because literate farmers will be able to read, understand and interpret the intricacies of agriculture thus improving their productivity (Ogunlade *et al.*, 2009). It could also be observed in Table-1 that 75% of the respondents have household size 6 and above. Hence, the greater proportion of farmers would have more household members to assist them in their farm work thus increasing their family labour strength. Table-1 also showed that the greater proportions (43.1%) of the farmers are small scale farmers having between 1 and 5 hectares of cocoa farms. However, impressive percentages (38.8%) of the farmers are large scale farmers having more than 10 hectares of cocoa farms. Meanwhile, some farmers attributed the non-expansion of their farms to the unavailability of sufficient fund and they called on the government to come to their aid by giving them soft loans to carry out their farming activities. Most of the farmers (55.6%) had sole improved cocoa variety (Amazon) while 43.06% of the farmers had a combination of both old and new cocoa varieties (Amelonado and Amazon varieties respectively) on their farms. Meanwhile, only 1.0% of the whole respondent farmers had sole Amelonado on their farms. The findings however showed that the farmers in the study area are responding very well to the new technologies in cocoa production.

Table-2 shows the perception of the farmers on cocoa pod husk fertilizer. The table showed that 92% of the whole farmers agreed that the colour of the fertilizer was good. As regards the odour of the fertilizer, 78% of the respondent farmers were satisfied with the odour while 22% of the respondents did not. Ninety percent of the respondents agreed that the texture of the fertilizer was good while 10% of the farmers were not satisfied with the texture. As regards the ease of the application of the fertilizer, 94% of the whole respondents agreed that the fertilizer is easy to apply but a greater proportion (53%) of the respondents believes that the fertilizer is too bulky to handle. Meanwhile, majority of the respondents (89%) believed that they can get the component material of the fertilizer with ease. This is quite obvious in as much that the component material of the fertilizer can easily be got especially on the farmers' farms. Ninety-three percent of the farmers believed that the fertilizer is cheaper when compared with inorganic fertilizer. This made almost all the farmers (99%) agreed that they were ready to continue using the fertilizer henceforth instead of inorganic fertilizer.

**Table-2.** Perception of farmers on cocoa pod husk fertilizer.

Attributes	No. of farmers with 'YES' response	No. of farmers with 'NO' response
Is the colour good?	66(92)	6(8)
Is the odour good?	56(78)	16(22)
Is the texture good?	65(90)	7(10)
Is it easy to apply?	68(94)	4(6)
Is it too bulky to handle?	38(53)	34(47)
Can you get the material component with ease?	64(89)	8(11)
Is the fertilizer cheaper when compared with inorganic fertilizer?	67(93)	5(7)
Are you ready to continue using the fertilizer henceforth instead of inorganic fertilizer?	71(99)	1(1)

**Source:** Field survey, 2009.

Table-3 shows the result of the correlation analysis. The result shows that there is a correlation between the perception of farmers and the age of farmers ( $p < 0.05$ ). The correlation coefficient (+0.244) indicated that as the farmers age increases, their perception about the fertilizer also increases. This is quite obvious because the perception of any technology increases as the age of the farmers increases. Table-3 also shows that the perception of farmers is strongly correlated with the

farmers' educational level ( $p < 0.01$ ). This result is in line with the findings of Oluyole and Sanusi (2009) that as the farmers' level of education increases; his propensity to perceive and adopt a technology also increases. It could also be observed in Table-3 that farmers perception is correlated with the farmers association membership ( $p < 0.05$ ). The result shows that increase in farmer's association membership increases the farmers' perception of cocoa pod husk fertilizer.

**Table-3.** Correlation analysis between the farmers' perception and the socio-economic variables.

Variables	Correlation coefficient	Significancy
Age of farmers	0.244*	Significant
Educational level	0.382**	Significant
Farm size	0.162	Not significant
Marital status	0.016	Not significant
Association membership	0.202*	Significant

**Source:** Field survey, 2009.

\*\* Correlation is significant at 0.01 level.

\* Correlation is significant at 0.05 level.

## CONCLUSIONS

Based on the empirical findings from this study, it could be concluded that the perception of farmers on the fertilizer (cocoa pod husk fertilizer) was positive. Farmers welcomed the technology and they were ready to adopt it.

## RECOMMENDATIONS

The following policy recommendations were suggested:

Firstly, farmers should be strengthened financially for them to practice the technology successfully. In view of this, government can come to their

aid by giving them soft loans. Secondly, the farmers should be encouraged to increase their level of education. This is quite necessary because there is a high correlation between educational level and farmers' perception. Thirdly, farmers should be enlightened to join association, since increase in association membership increases farmers perception and facilitates access to credit facilities.



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