

SOCIO-CULTURAL CHARACTERISTICS OF SMALLHOLDER PIG FARMERS AND THEIR FEED INGREDIENTS USE APPROACHES AT PERI-URBAN AND RURAL FARMING LOCATIONS IN IMO STATE, NIGERIA

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Abstract

This study determined the socio-cultural characteristics of smallholder pig farmers and their feed ingredients use approaches at two locations in Imo state, Nigeria. Primary data were generated with the aid of a structured questionnaires. The farmers were mostly males (93.75%) aged between 31-60 years (71%), married (78.13%) and mostly educated at secondary level (50%) and tertiary (40.63%). About 92% of these farmers were not educated in agricultural disciplines, with about 57% haven been in the business for the past 10 years on full-time basis (68.70%). Majority (65.63%) of the farmers formulated their own diets, with PKC (100%), maize offal (71.88%), maize (59.38%) palm oil sludge and cassava tuber (43.95% each) constituting the major energy feed ingredients used, while blood meal (78.32%), soybean meal (65.63%), groundnuts and cowpea (53.13% each) constituted the major protein raw material used. Popular fibre materials were cassava peels (75%), yam peels (71.88%), plantain peels (65.63%) and plant leaves (53.13%). The present results highlight the need for further studies on the local feed ingredients utilization practices of these farmers.

Keywords: feed ingredients, palm kernel cake, Pigs farmers

Introduction

Small-scale intensive pig production in Nigeria is currently being challenged by high cost of feed raw materials arising from the continued increase in the cost of conventional feedstuffs. Nigeria is however characterized with a wide range of alternative feed resources such as oilseeds, grains, forage crops, peels, animal and agro industrial by-products. These locally available feed materials have potential to sustain the piggery industry, although underutilized by farmers due to inadequate information on their location, storage and quality enhancement (Ohanaka *et al.*, 2017).

Different alternative feed raw materials abound in Imo state and are incorporated into pig feeding according to novel methods developed by the farmers (Ohanaka *et al.*, 2017). According to Wettasinha *et al.* (2008) such farmer led local experimentation is common in many regions of the world. However, these location specific innovations are usually lost with changing environmental and social needs of the innovators. Identifying, documenting and if possible, evaluating such local innovation systems provide an entry point to Participatory Technology Development (PTD) that begins with studying existing farmer approaches and practices geared towards solving local problems (Wettasinha *et al.*, 2008).

This study determined the socio-cultural characteristics of smallholder pig farmers and their feed ingredients use approaches at peri-urban and rural farming locations in Imo state, Nigeria.

Materials and Methods

The study was carried out among pig farmers in two Local Government Areas (LGAs) in Imo State, in the tropical rain forest environment of southeastern Nigeria. An informal survey was carried out prior to the actual study during which, the researcher made himself known to pig farmers and discussed the details of the work with them. The study LGAs were Owerri West LGA (OWL), a peri-urban area and Aboh-Mbaise LGA (AML) a rural area. At these locations, 25 pig farms each were purposively selected based on the willingness of their owner to participate in the study, making a total of 50 pig farmers. Primary data were collected with the aid of a well-structured questionnaire. On the whole, only 32 questionnaires were returned by the farmers (17 at OWL and 15 at AML). Data generated from the socio-cultural study were subjected to descriptive statistics, such as frequency count, mean and standard deviations.

Results and Discussion

Results in Table 1 showed that most of the farmers were males (93.75%) aged between 31-60 years (71.88%), married (78.13%) and mostly educated at secondary level (50%) and tertiary (40.63%).

Table 1: Sociocultural characteristics of small-scale pig farmers at Owerri West (n=17) and Abo-Mbaise (n=15) in Imo state

Parameters	Owerri west LGA Frequency (%)	Aboh-Mbaise LGA Frequency (%)	Overall (n=32) Mean Frequency (%)
a. Sex			
Male	15 (88.24)	15 (100.00)	30 (93.75)
Female	2 (11.77)	0(0.00)	2 (6.25)
b. Age			
20–30	1 (5.88)	3 (20.00)	4 (12.50)
31–40	5 (29.41)	4 (26.67)	9 (28.13)
41–50	3 (17.65)	3 (20.00)	6 (18.75)
51–60	4 (23.53)	4 (26.67)	8 (25.00)
Above 60	4 (23.53)	1 (6.67)	5(15.63)
c. Marital status			
Married	13 (76.47)	12 (80.00)	25 (78.13)
Single	4 (23.53)	25 (20.00)	5 (21.88)
d. Education qualification			
Primary	1 (5.88)	2 (13.33)	3 (9.38)
Secondary	5 (29.41)	11 (73.33)	16 (50.00)
Tertiary	11 (64.71)	2 (13.33)	13 (40.63)
Nil	0(0.00)	0(0.00)	0(0.00)
e. Tertiary education	(n=11)	(n=2)	(n=13)
Agriculture	0(0.00)	0(0.00)	0(0.00)
Animal science	0(0.00)	0(0.00)	0(0.00)
Animal health	1 (9.09)	0(0.00)	1 (7.69)
Others	10 (90.91)	2 (100.00)	12 92.31)
f. Years of experience			
1–5	8 (47.06)	3 (20.00)	11 (34.38)
6–10	3 (17.65)	1 (6.67)	4 (12.50)
11–15	2 (11.77)	10 (66.67)	12 (37.50)
16–20	2 (11.77)	1 (6.67)	3 (9.38)
Above 20	2 (11.77)	0(0.00)	2 (6.25)
g. Carrier type			
Full time	13 (76.47)	9 (60.00)	22 (68.75)
Part time	4 (23.53)	6 (40.00)	10 31.25)
h. Number of pigs			
1–10	0(0.00)	0(0.00)	0(0.00)
11–30	2 (11.76)	2 (13.33)	4 (12.50)
31–50	5 (29.41)	7 (46.67)	12 (37.50)
51–100	3 (17.65)	0(0.00)	3 (9.38)
Above 100	7 (41.18)	6 (40.00)	13 (40.63)

About 92% of these farmers were not educated on any agricultural discipline, with about 47% been in the business for the past 10 years on full-time basis (68.70%). Majority (40.63%) of the farmers stocked above 100 pigs, while 37.50% stocked between 31-50 pigs. Across study locations, the results showed that farmers at OWL were more educated (64.71% tertiary) than those at AML (73.33% secondary), most of the tertiary institution educated farmers (90.91 and 100% respectively)

specializing in non-agriculture related disciplines. Similar results were reported by Okoli *et al.* (2009) in the same Imo state.

Results in Table 2 showed that majority (65.63%) of the farmers formulated their own diets with PKC (100%), maize offal (71.88%), maize (59.38%) palm oil sludge and cassava tuber (43.95% each) constituting the major energy feed ingredients used, while blood meal (78.32%), soybean meal (65.63%), groundnuts and cowpea (53.13% each) constituted the major protein raw material used.

Table 2: Different alternative raw materials utilized in feeding pigs at the study location

Parameters	Owerri West LGA Frequency (%)	Aboh-Mbaise LGA Frequency (%)	Overall (n=32) Mean Frequency (%)
a. Types of feed used			
Commercial	0(0.00)	0(0.00)	0(0.00)
Farm made	6 (35.29)	15 (100.00)	21(65.63)
Both	11 (64.71)	0(0.00)	11(34.38)
b. Energy materials used			
Maize	12 (70.59)	7 (46.67)	19 (59.38)
PKC	17 (100.00)	15 (100.00)	32 (100.00)
Sorghum	3 (17.65)	1 (6.67)	4 (12.50)
Maize offal	14 (82.35)	9 (60.00)	23 (71.88)
Palm oil sludge	2 (11.77)	12 (80.00)	14 (43.75)
Cassava tuber	9 (52.94)	5 (33.33)	21 43.75)
Brewery waste	2 (11.77)	1 (6.67)	3 (9.38)
Others	1 (5.88)	0(0.00)	1(3.13)
c. Protein materials used			
Groundnut	9 (52.94)	8 (53.33)	17 (53.13)
Soy bean/cake	12 (70.59)	9 (60.00)	21 (65.63)
Beans	10 (58.82)	7 (46.67)	17 (53.13)
Blood meal	10 (58.82)	15 (100.00)	25 (78.13)
Meat offal	1 (5.88)	0(0.00)	1 (3.13)
Spent grain	2 (11.77)	0(0.00)	2(6.25)
Others	1 (5.88)	2 (13.33)	3 (9.38)
d. Fiber materials used			
Rumen digester	0(0.00)	3 (20.00)	3 (9.38)
Cassava serviette	3 (17.65)	7 (46.67)	10 (31.25)
Cassava peels	11 (64.71)	13 (86.67)	24 (75.00)
Yam peels	11 (64.71)	12 (80.00)	23 (71.88)
Plantain peels	9 (52.94)	12 (80.00)	21 (65.63)
Leaves/vegetables	9 (52.94)	8 (53.33)	17 (53.33)
Plantain/banana trunks	7 (41.18)	8 (53.33)	15 (46.88)
Others	2 (11.77)	7 (46.67)	9 (28.13)
Forages inclusion in diets			
Yes	15 (88.24)	14 (93.33)	29 (90.63)
No	2 (11.77)	1 (6.67)	3 (9.38)

Popular fibre materials were cassava peels (75%), yam peels (71.88%), plantain peels (65.63%) and plant leaves (53.13%) while majority (81.82%) of the farmers used feed additive mixes in the feed. There was a clear disparity in the choice of raw materials at the two locations with more maize, cassava tuber, maize offal and brewers waste being utilized at OWL and more palm oil sludge, blood meal, rumen digesta, cassava, yam and plantain wastes being utilized at AML indicating greater innovative use of available raw materials at the rural location. About 90% of the farmers gave a variety of forages to their pigs.

However, Table 3 showed that out of then 22 forage plants and vegetables fed to the pigs only four, water leaf (*Tanilum triangulare*), *Cetrosema pubescene*, pumpkin leaf (*Telfera occidentalis*) and pawpaw leaf (*Carica papaya*) were fed at the two location, indicating diversity of knowledge, which has also been reported by Obua *et al.* (2012).

Table 3: Forage plants and vegetables utilized in pig feeding

Owerri West LGA	Aboh-Mbaise LGA	Frequency
Water leaf (<i>Tanilum triangulare</i>)	Water leaf (<i>Tanilum triangular</i>)	2
<i>Cetrosema pubescene</i>	<i>Centrosema pubescene</i>	2
Pumpkin leaf (<i>Telfera occidentalis</i>)	Pumpkin leaf (<i>Telfera Occidentalis</i>)	2
Pawpaw leaf (<i>Carica papaya</i>)	Pawpaw leaf (<i>Carica papaya</i>)	2
Plantain leaf (<i>Musa paradisiaca</i>)	Awolowo leaf (<i>Chromlaena odorata</i>)	1
Banana leaf (<i>Musa sapiantum</i>)	Pineapple (<i>Bananas comosus</i>)	1
Guinea grass (<i>Panicum maximum</i>)	Otite (<i>Diodia scandens</i>)	1
Moringa leaf (<i>Moringa oleifera</i>)	Okpete (<i>Castus afer</i>)	1
Guava leaf (<i>Psidium guajava</i>)	Udo (<i>Urinal lobata</i>)	1
Elephant grass (<i>Pannisetum purpuruem</i>)	Oha (<i>Pteracarpus osum</i>)	1
Velvet beans (<i>Mucuna prureans</i>)	Red leaf (<i>Althernanthera brasiliانا</i>)	1
Bitter leaf (<i>Vernonia amygdalina</i>)	Green (<i>Amaranthus spinosis</i>)	1
Cabbage (<i>Brassica oleracea</i>)	Cucumber (<i>Cucumis sativus</i>)	1
Total 13	13	22

Conclusion

Data generated from this study shows a rich innovative local feed ingredients utilization culture among smallholder pig farmers in Imo state, who were mostly educated. The present results highlight the need for further studies on the local feed ingredients utilization practices of these farmers for documentation and extended industrial applications.

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