Urban backyard swine production: A case study of Kaduna, A Nigerian metropolitan city

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Abstract

A survey to assess the production pattern of backyard pig raising in Kaduna Metropolis was carried out using structured questionnaires. A total of 170 farmers were randomly selected for the study. 42.94% of the respondents were traders, 24.71% civil servants, 19.41% crop farmers and 5.88% were students. More women (61.76%) than men (38.23%) kept backyard pigs with herd size of 2-10 pigs. Most (86.50%) of the pigs were of the indigenous breed and are raised as a secondary source of income for the family. Management system was mostly extensive (71.24%), but majority of the producers (98.24%) fed kitchen wastes, vegetables and agro-industrial by-products as supplement. About 58.40% of the farmers interviewed used mud-bricks with thatched roof and rammed earth floor to house their pigs over night, while 55.20% used cement blocks with zinc roof. Most of the farmers (98.20%) reported incredible market age of 1¹/₂ years and sold their pigs live. Mortality was generally high, but was higher for young piglets than for adults and was mainly due to diseases and poor management. Only 58.82% of the respondents applied medications to their pigs, mostly against worms. Among the identified constraints to improved production are high cost and non-availability of compound formula feeds, difficulties in obtaining bank loans, lack of organised Markets for pigs, high incidence of diseases, accidental mortality, theft, poor Management, inadequate veterinary services and lack of title to land. About 92.94% of the respondents found pig raising to be profitable. The survey showed that pig productivity in Nigeria's urban settings could be enhanced if adequate attention is paid to the removal of identified constraints to production.

Keywords: Urban backyard, swine production, Kaduna, Nigeria

Introduction

In spite of the Federal Government of Nigeria's National Development plans which emphasizes increased production of livestock and fish to meet the domestic needs and create a surplus for export, there is still a disturbing and noticeable shortage of animal protein in the diet of the average Nigerian. Balogun *et al.*, (1993) indicated that solutions to the present meat shortage rests on the promotion and sustenance of increased and more efficient production of all classes of meat animals. Pig with high

fecundity, short generation interval, excellent feed conversion efficiency and ability to thrive on a wide range of feed resources including those inedible by man, offer a short to medium term solution to the problem of meat shortage and malnutrition. Nigeria has the second highest population of pigs in Africa but pork accounts for only about 4.45% of the total meat supply to the country (Pathiraja *et al.*, 1986). Religious and cultural taboos are generally considered major constraints to pig production in the northern part of the country. Kaduna is located in the north but has a high population of

non-muslims. There is therefore visible presence of pig farmers in the metropolis, mostly in the hands of peasant farmers. Survey of their management practices and their problems is a way of fashioning a development programme that will enhance their production. Under the Unified Extension Services, extension packages are to be developed for the small scale farmers such as those in Kaduna metropolis. To do this, on-farm studies of their problems must be carried out. This survey was designed to study the background of pig farmers, with a view to recommending appropriate extension packages by researchers and extension agents.

Materials and methods

The study covered 10 major geographical areas in the Kaduna metropolis. They were selected by random sampling. Only farmers who kept pigs were interviewed. Both structured questionnaires and interviews were used to collect information's from the farmers. A total of 170 farmers were randomly selected and interviewed with an average of seventeen (17) farmers from each of the geographical areas. Data collected include demographic information on the farmers, their herd size, breed type, type of housing, diseases and medications, marketing of the pig and pig products, management practices and problems. The study lasted for 8 weeks. The data collected were analysed using simple descriptive statistics.

Results and Discussion

The results obtained from the study are presented in Tables I - V.

Biodata of Respondents

The biodata of the respondents (Table I) showed that 42.94% of them were traders, 24.71% of them were civil servants, 19.41% crop farmers and 5.88% were students. None of those interviewed kept pigs as a sole business. That most of the respondents were traders is to be expected since urban cities are usually centres of

commerce. Most Nigerian livestock farmers live in peri-urban and villages and livestock raising in urban centres is generally a secondary enterprise. Next to the involvement of traders in pig raising are the civil servants. This also is to be expected since Kaduna is a State capital.

All the respondents were christians and none was a muslim. This observation supports Eusebio (1980) who indicated that pork consumption is not only forbidden in Islam but also that pig production is forbidden among the muslims. Adebosin and Malgwi (1986) however, emphasized that pig rearing could ease pressure on beef and other meat types resulting in lower prices of meat and more intake of animal protein for healthy living.

Most of the interviewees were women (61.76%) while only 38.24% were men. Majority of the women that kept pigs as secondary enterprise were gainfully engaged in brewing local sorghum beer (Burkutu) which is their primary enterprise. The beer residue ('Burkutu waste') is recycled into pig feeding which may be an additional attraction for them to raise pigs. The higher participation of women in pig rearing in the present study supports the observation of Folola (1979) who reported that women are the main livestock rearers especially among the Yoruba speaking people of South-West of Nigeria.

Most of the respondents were adults above the age of 20 years and about 90.59% of them were below the age of 50 years. The age range of 20-50 years is indicative of the potential that exists for improved production practices since people within this age range would be expected to be more receptive to new innovations. About 45% of the respondents had no formal education while only 20% had at least the First School Leaving Certificate. None of the respondents had previous training in pig raising. The low level of education and inadequate awareness of the prospects of pig raising could explain the conservative approach to pig farming by most of the respondents.

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Motivation for Keeping Pigs, Breed and Herd Size

Most of the respondents (82.35%) kept pigs as a secondary source of income (Table II). Those keeping them for consumption and hobby were 5.88 and 0.5% respectively. Most of the respondents (86.50%) kept indigenous pigs which studies have shown are characterized by poor growth, poor feed conversion efficiency, small litter size, high proportions of runts, low extraction rate and high mortality (Fetuga *et al.*, 1976). Only 13.50% of the farmers kept the exotic breeds mostly the Large White X Hampshire cross-breeds. The fact that the indigenous pigs were more readily available and cheaper might account for their predominance.

Most of the respondents (55.88%) kept 1-5 pigs in their backyard while 22.06% kept between 4-7 pigs. About 17.05% of the respondents kept 8 pigs and above. These figures show that pigs were not kept in commercial sizes. This is typical of the peasant's farming culture where a few pigs are kept to augment family income. Unavailability and, lack of ownership to land in urban centres and inadequate training in modern pig farming are some of the factors that have affected the expansion of pig raising. Perhaps one other reason why the pigs were not kept in commercial sizes is lack of awareness of existing credit facilities (bank loans) by the pig farmers that could assist them in expanding their farms.

Table I: Biodata of respondents

Factor	Frequency	%
Occupation of Respondents		
Traders	73.0	42.94
Civil Servants	42	24.71
Farmers	33	19.41
Students	12	5.88
Others	10	7.06
Age of Respondents (Years)		
20-30	47	27.65
31-41	54	31.76
41-50	53	31.18
51 and above	16	9.41
Sex of Respondents		
Male	65	38.24
Female	105	61.76
Religion of Respondents		
Christianity	170	100
Muslim	0	0
Traditional	0	0
Experience of Respondents (Years)		
1-5	63	37.06
6-10	62	36.47
11-15	13	7.65
16-20	17	10.00
No response	15	8.82

Table II: Motivation for Keeping Pigs, Breed and Herd Size

Factor	Frequency	%	Reasons
Motivation for keeping pigs			
As source of supplementary income	140	82.35	
For domestic meat supply	10	5.88	
Hobby	1	0.59	
Others	19	11.18	
Type of Breed Kept			
Indigenous	147	86.47	Commonly available and cheaper Grow faster and Produce more piglets per litter.
Exotic	23	13.53	
Herd Size			
1-3	95	55.88	-
4-7	46	27.06	-
8 and above	29	17.05	-

Management, Housing and Feeding

Majority of the respondents (71.76%) kept their animals under the extensive system of management. About 16.47% of the farmers adopted the semi-intensive system while only 11.77% confined their pigs totally (Table III). High cost of inputs such as building materials and feeds were major reasons given by most of the respondents for adopting the extensive system of management. Although this system of management is cheap and less labour intensive, it is characterised by low productivity and high losses due to accidents, diseases and theft. In addition, with the free range management system, there is environmental pollution and destruction of the landscape. These are even more serious in the urban centres.

Various types of housing materials were used by the farmers depending on scale of production or size of holding. The pig houses are either mud-brick walls with thatched roof and rammed earth floor (58.40%), cement brick walls with zinc roof and concrete floor (55.20%) or burnt brick walls with zinc roof and concrete floor (6.4%).

Although most of the farmers kept their animals in mud-brick walls with thatched roof and rammed earth floor because it was cheap, that kind of house predisposes the pigs to diseases and are not durable. The cement block walls with zinc roof are better because of higher level of hygiene and durability. Apart from durability and hygiene, the economy of better housing would favour such housing in the long run.

Most of the respondents (98.24%) depended on kitchen left overs with occasional supplements of maize by-products or local beer residue ('Burkutu waste'). In most cases, the animals were allowed to scavenge for food. None of the respondent used commercial pig feeds because such feeds are not available. Apart from genetic limitations of the indigenous pigs, heavy reliance in scavenging for food is responsible for the poor performance of the pigs because pigs are unable to meet up their nutrients requirements through scavenging and a lot of energy is wasted during scavenging. There is also high loss of piglets due to accidents, theft and diseases. Feed millers should be encouraged

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to explore the potential market for pig feeds in Kaduna. using the alternative feed ingredients. not consumed by man to lower costs.

Table III: Management System, Housing and Feeding.

Factor	Frequency	%	Reasons
Management System			
Extensive	122	71.76	Economical & Practicable
Semi-intensive	28	16.47	Not too expensive and for safety
Intensive	20	11.77	Too expensive but ensures the safety & better performance of the animals.
Type of House Used			
Mudbrick house with thatched and rammed earth floor	99	58.40	Cheap to construct
Cement block house with zinc and concrete floor	60	35.20	Safety, hygiene and durability.
Burnt brick house with zinc concrete floor	11	6.40	Durable and for hygiene purpose
Type of Feed Used			
Household waste (Kitchen waste, waste bread, mangoes, local beer residue, maize bran, left over food etc.)	167	98.24	Cheap and available
Commercial pig feed	0	0	Farmers are not aware of commercial feed for pigs.
No response	3	1.76	-

Marketing of Pigs and Pig Products

Most of the respondents (32.86%) sold their animals at incredible market age of 1½ years while 29.40% sold theirs as wearers (Table IV).. Majority of the respondents (91.77%) sold their animals to middlemen who offered better prices and only 8.25% of them sold theirs to pork hawkers. Sales of live pigs were based on visual appraisal of the animals. It is common to sell pigs before attaining normal market age. The major considerations being the urgent financial needs of the family. The fact that only 0.60% of the respondents sold their animals dressed is an indication that slaughtering of pigs in the area of study is very much of a backyard affair. Most of

the farmers sold their pigs live to avoid the labour involved in slaughtering. No farmer would want to spend the time and energy slaughtering an animal when he or she can make substantial profit by selling it live. Lack of refrigerators, or deep freezers by the farmers may account for why the farmers may account for why the animals were sold live. In addition, lack of refrigerators or deep freezers by the farmers may account for why the animals were sold live. About 92.94% of the respondents made profits of over ₦3000 per animal at slaughter age, which is considered a substantial supplement to family income.

Table IV: Marketing of Pigs and Products by Respondents

Factor	Frequency	%
Age at which pigs are sold		
12 weeks	50	29.41
6 months	16	9.41
1 year	48	28.24
1 1/2 years	56	32.94
Mode of sale of pigs		
Live	167	98.20
Dressed	1	0.60
No response	2	1.20
Market channels		
Direct sale to middlemen	156	91.77
Direct sale to pork hawkers	14	8.23
Market prospect		
Yes	135	79.41
No	28	16.47
No response	7	4.12
Is pig raising profitable?		
Yes	158	92.94
No	12	7.06
Profit range per animal at slaughter weight		
0 - ₦500	12	7.06
₦600 - ₦1000	9	5.29
₦1100 - ₦2000	22	12.94
₦2100 - ₦3000	14	8.23
₦3100 - and above	60	35.28
No response	53	31.20

Diseases and Mortality

Majority (58.82%, of the respondents carried out medications on their animals mainly against worms. This is not surprising as the scavenging pigs could easily pick up worms particularly during the wet season. About 41.18% of the respondents did not provide medications for their animals (Table V). For this category of farmers, they prefer to slaughter their sick animals rather than spend their meager resources on drugs. With young pigs, not big enough for

consumption, they simply watch the disease subside or kill the animal.

Majority of the farmers (58.82%) reported that mortality was more with the preweaning piglets than the adults. Mortality was attributed mainly to diseases (42.95%) and poor system of management (41.76%). Other causes of mortality indicated by the farmers were poor nutrition, poisoning of the pigs by some religious fanatics, accidental killings by motorists, adverse environmental conditions etc.

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Table V: Medication and mortality in herd reported by respondents

Factor	Frequency	%
Carry out medication?		
Yes	100	58.82
No	70	41.18
Diseases treated		
Worms	117	68.83
Ectoparasites	4	2.35
Infectious diseases	10	5.88
No treatment	39	22.94
Age at which mortality occur		
1 – 12 weeks old	100	58.82
1 – 3 years old	59	34.71
3 years and above	11	6.47
Causes of mortality		
Diseases	73	42.94
Poisons	5	2.94
Poor nutrition	6	3.53
Poor management	71	41.76
Unknown	15	8.82

General Problems Encountered in Pig Raising

Some of the constraints highlighted by the farmers that affect pig raising include unavailability of compound formula feeds, high cost, difficulty in obtaining credit facilities from banks for large scale production, diseases, lack of veterinary services and extension agents, losses due to motor accidents and theft, lack of enough land for expansion and problem of waste disposal. In conclusion, great potential exists for pig production in Kaduna Metropolis. For optimum growth and reproductive performance and for the industry to develop, however, certain changes in pig husbandry are necessary which can only be brought about through sound extension education. Identified constraints to pig production by the farmers must be addressed by the individual farmers, government, livestock scientists and veterinarians. It is recommended that livestock extension service be strengthened and appropriate extension package be developed for the small scale pig farmers such as those

encountered in Kaduna metropolis during the study.

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