Production of local pigeons by small holders in the River Nile State, Sudan

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ABSTRACT

A questionnaire was conducted in Atbara town (March 2002), the River Nile State, Sudan, to collect primary information on management and rearing of local pigeons. In this study the average flock size was 18 pairs per household. The sources of the initial flock were the market (64%), relatives (20%) and friends (16%). The reasons for keeping pigeons varied. The majority of the respondents (76%) kept pigeons as resource of income. The semi- intensive system is the main (%96) production system used for raising the local pigeons. Owners offer the birds grains, some leguminous seeds and occasionally drinking water and left them to roam during the day and kept at night in elevated brick houses. The respondents technical information on various management aspects, such as frequency of breeding, feeding، housing and disease control, were quite fair. It could be concluded that raising pigeons in town is mainly for income increase and consumption

INTRODUCTION

Indigenous poultry production in Africa is constrained by several factors, such as poor nutrition (Siamba *el al*., 1999) poor health management, housing and inadequate equipment (Kaiser, 1990; Siamba *et al*., 1999). This situation led to low production, minimum cash income and overall negative attitude towards indigenous birds even from many agricultural policy makers, including livestock specialists. The main meat birds in the Sudan, are indigenous chicken, spent commercial hens, surplus cocks, broilers, pigeons, ducks, turkey

and guinea fowl. Pigeons, which rank second to the indigenous chicken in the Sudan, were kept mainly for subsistence production, that is normally based on indigenous birds which are extensively found all over the country.

However, information about this local poultry species in the Sudan are scarce. Pigeons (*Columba livia*) belong to the family Columbi fromidae which includes both pigeons and doves, and has more than 300 species. All the species lay two white eggs in a clutch. The parents produce pigeon milk, which is fed by regurgitation to the young (National Research Council, NRC, 1991).

Pigeons are extensively used for scientific research in genetics، parasitology, physiology and psychology. The squabs (young pigeon) have a higher growth rate, greater dressing percentage, higher percentage of soluble protein and a smaller proportion of connective tissues than most meats (NRC, 1991).

The objectives of the present study are (l) to study the local pigeon situation in order to know exactly what is happening at the small holder producers' levels (primary level) and how those poultry owners are managing their flocks, (2) to draw attention to the importance of this poultry species.

MATERIALS AND METHODS

Study site

This study was carried out in the River Nile State, Sudan, in March 2002. The total population in this state was estimated in 2001 to be 918000 with the Sudanese nationals being 99.9%. The urban population represents 33.7% of the total population and most of them (95%) lived in houses with one floor and 3.1% lived in assorted categories of housing. The literacy rate for both sexes is 64.5% (United Nation's Fund for Population Activities, UNFPA, 2001). Atbara town (310 km north of Khartoum) was chosen as a site for the study, because it is he most populated settlements in the State with the total population of 8000 as stated in the fourth population census of the Sudan, 1993. The majority of them are workers.

Method of baseline data collection

The baseline data of this study were collected through a questionire. A total of 250 households were randomly selected to participate this study. Data were collected on flock size, source of flock, ownership pattern, feeds and feeding, housing, system of production and mortality causes.

RESULTS

Flock size, source, ownership patterns and educational levels

The initial average flock size was 18 pairs of indigenous pigeons per households with a range of 15—20 pairs. A total of 64% of the households purchased their initial stock while 20% and 16% obtained them as gifts from relatives and friends, respectively (Table l). The results showed that 56% and 36% of pigeon flock was owned by husband and wife, respectively, while only 8% was owned by the children. The educational level varied among the respondents; the majority (56%) had formal primary education, 20% had secondary education, while 24% had Khaloa education.

Table 1. Responses on flock size, source and ownership of the local pigeons.

Flock size (pair)	%	Source	%	Ownership	
10-15	20	Market	64	Husband	26
16-20	48	Relatives	20	Wife	36
>20	32	Friends	16	Children	8

Feeds and feeding

The semi—intensive system was the predominant system (96%) used for rearing indigenous pigeons in the study area (Table 2). In this survey, most of the households (92%) kept their birds in small brick houses of 2.5x2.5x2.5m. The house had small openings left open all the time to allow the birds to move freely. The birds scavenged during the day and were confined at night. About 84% of the households offered them only grains (sorghum and wheat) and some leguminous seeds (peas and peanuts). Feeds were broadcast on the ground and the birds assembled for feeding upon hearing the accustomed sound of the

person who fed them. The majority of the households (68%) offered the feed once while 32%of them provided feed twice a day. Occasionally water was available in small ponds or pans for both drinking and bathing.

Table 2. Responses on system of production, types of feed and feeding pattern for keeping local pigeons.

System of Production	%	Types of feed	%	Feeding pattern	%
Free- range	3.4	Grains only	84	Once/day	68
Semi-intensive	96.6	Grains and leguminous seeds	16	Twice/day	32
Intensive	0	Household waste	0	No feed	0

Reason for keeping pigeons, seasons of production and methods of sexing

Three quarters (76%) of the respondents kept pigeons as a source of %16reared them for meat and only 8% kept them for both cash consumption (Table 3). The majority of the flock owners (72%) owed that the breeding season was all year around, while 28% of them reported seasonal reproduction in summer (16%) and autumn Owners were aware that indigenous pigeons reached sexual maturity at 6-8 months of age. The majority of the respondents (68%) were capable of sexing youngsters (<6 months) and mature (>6 months) pigeons according to their body size and behavior.

Table 3. Responses on reasons for keeping pigeons, season of breeding and methods of sexing.

Reasons for keeping pigeons	%	Seasons of breeding	%	Methods of sexing	%
Income	76	All the year	72	Body weight	12
Consumption	16	Summer	16	Behavior	20
Income and consumption	8	Winter	0	Bodyweight	68
Cultural	0	Autumn	12	and behavior	0
Income and cultural	0				

Mortality and disease control

In this study, the flock owners attributed mortality losses to various Factors. The major ones were diseases (76%) (ND 32%, Coccidiosis 30% and others 12%) and predators (24%) (cats 20%, dogs 4%) (Table 4). The results showed 64% of the respondents used antibiotics to control diseases, 4% used that traditional medicine (based mainly on herbs) while 32% of them used no treatments.

Table 4. Responses on mortality losses, predators and disease control

Mortality losses	%	Predators	%	Diseases control	%
Diseases	76	Cats	83.3	Antibiotics	
Predators	24	Dogs	16.7	Local remedy	64
others	0	Rats	0	No treatment	4
		Snakes	0		32
		Thieves	0		

DISCUSSION

The investigation indicated that, pigeons were primarily reared for subsistence with minimum inputs (sorghum and sometime leguminous seeds). The results agreed well with Siamba et al., (1 999), Who attributed much of the low performance of indigenous poultry to the poor scavengeable resource base and with Levi(1974) who emphasized that pigeons were grainvorous birds. However, when grains or seeds were fed to pigeons they should be clean, sound and 'hardened (Levi, 1974). Broadcasting grains on the ground to pigeons as practiced by the respondents in this survey, subjected them to contamination by diseases, eggs of worm parasites and dirts. In this respect, wooden or metal feeders might be the most appropriate method for feeding pigeons. The amount of food that pigeons consumed varied according to several factors, such as, the breed, age of the bird, quality of feed and the environmental factors. Levi (1974) concluded that, the youngsters (5- 8 weeks of age) consumed 50 g/day compared to 42 g/day for 6 months old mature unmated bird. This showed clearly that food consumption was highest at the age of 5- 8 weeks and then gradually decreased at 6 months of age and at maturity the normal feed consumption was 32 g/day.

Pigeons house was quite variable and had no standard design. Every conceivable form could be adopted (Levi, 1974). The walls in the two ends and sides should be made of bricks. Levi (1974) showed that pigenons loft was either erected at the ground level or elevated from the ground which was in line with the findings of this study.

All the respondents who participated in this survey were married indicating that pigeons production was most common among married couples. Most of them (920 0) kept indigenous pigeons mainly for cash income and meat consumption, which agreed with the objective indigenous poultry production in Africa (Peters et [IL, 1997; Siamba (1999).

Although, indigenous pigeons production was characterized minimum input and low income, pigeons could become a significant addition to the diet as well as a source of substantial supplement income. More research work is needed on nutrition, management and disease control to improve productivity of this poultry species.

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