

INTRODUCTION

Local chicken breeds represent 80% of the world poultry population and contribute significantly to the meat and egg production. However, the majority of these breeds had not been recorded and studied. In the Democratic Republic of Congo (DRC), poultry keeping is an important livelihood opportunity for the poor. To improve the local poultry sector, many problems are necessary to be resolved. The main objectives of this work were to evaluate the chicken production system in DRC (Kinshasa and Bas-Congo), its contribution to the food security and to improve income of breeders and to identify chicken production related constraints.

MATERIAL AND METHODS

A. Survey of households keeping backyard poultry

This study investigates backyard and small-scale poultry keeping characteristics in Democratic Republic of Congo (DRC). A survey has been carried out in 96 local chicken breeders from 2 provinces: Kinshasa (n=19) and Bas-Congo (n=77). The semi-structured interviews covered household characteristics, poultry keeping practices and motives as well as breed description, management and perceived evolution.

B. Morpho-biometric characterization

Adult males and females (Kinshasa: n=188 and n=49; Bas-Congo: n=401 and n=150, respectively) were used for morpho-biometric characterization. The different body measurements were recorded in accordance with the FAO recommendations (1981), using digital balance, electronic sliding caliper and tape measure. The information collected were sex, body weight and reported age of animal, thoracic girth, feathers type and color, the comb's type, length, height and color, wattles height and color, tarsus length and diameter, wings length as well as the length and color of the beak.



RESULTS

Table 1. Relative livestock distribution (%) by species in the surveyed households

Species	% households - (n)	
	Kinshasa (n=19)	Bas-Congo (n=77)
Chicken	100 (17)	100 (36)
Sheep	57.89 (3)	7.79 (4)
Rabbit	68.42 (10)	7.79 (4)
Goat	10.53 (5)	44.20 (3)
Duck	15.79(8)	7.79 (9)
Pig	15.79 (6)	13.0 (5)
Guinea pigs	15.79 (5)	20.80 (8)
Pigeons	-	2.60 (8)

Table 2. Phenotypic characteristics of local chicken population evaluated in DRC

Variable	Kinshasa	Bas-Congo
Feather colors		
Number of colors (n)	11	20
Normal distribution (%)	98.73	85.3
Bare-neck (%)	1.27	6.1
Smooth type (%)	100	98.4
Weight and age of slaughter and diameter of tarsus		
Weight (kg)	1.26	0.93
Age of slaughter (month)	12	14
Diameter of tarsus (mm)	12.71	-

The livestock portfolio of poultry farmers was diversified in all two regions (Table 1).

Women were in charge of poultry breeding in 70.6% and 42.9% of interviewed households in Kinshasa and Bas-Congo respectively.

However the first backyard chickens obtained differs from region to region. In the Bas-Congo, they are mainly bought (45.5%) and shared (29.9%) while in Kinshasa, they are obtained as bought (78.9%) and through inheritance (21.1%).

Various explanations have been given by farmers to the issues of reasons for keeping backyard poultry and reasons to choose the local breed. The main reasons are: Meat production (Kinshasa: 78.9%, Bas-Congo: 45.5%); tradition (Kinshasa : 31.6%, DRC: 59.7%); the culinary and nutritional quality of chicken meat and eggs (Kinshasa: 84.2%; Bas-Congo: 15.6%); toughness and resilience (kinshasa: 68.4%; Bas-Congo: 53.3%) and easiness of breeding (Kinshasa: 84.2%; Bas-Congo: 75.3%).

Principal constraints: The principal constraints reported by reviewers are as follows: predators (Kinshasa: 68.4%; Bas-Congo: 93.5%), diseases (kinshasa: 84.2%; Bas-Congo: 80.5%), robbery (kinshasa: 31.6%; Bas-Congo: 26.0%), low production (insufficient egg and meat production (Kinshasa: 68.4%; Bas-Congo: 26.0%), cost of feed (Kinshasa: 80.5%; Bas-Congo: 22.1%), road accidents (Kinshasa: 68.4%; Bas-Congo: 15.6%) and uncontrolled crossbreeding of animals scavenging (Kinshasa: 26.3%; Bas-Congo: 7.80%)

Proposition to resolve these constraints: Proper vaccination, de-worming and veterinary care (Kinshasa: 100%; Bas-Congo: 93.5%); Provide additional concentrate feed (Kinshasa: 68.4%; Bas-Congo: 80.5%); Chicken with good production (Kinshasa: 57.9%; Bas-Congo: 93.5%); Protect from predators (Kinshasa: 100%; Bas-Congo: 93.5%).

CONCLUSION

The results revealed that the traditional production was dominant in the chicken production system, where the local chicken was managed mainly on scavenging with a poor supplementation grains and household food stuff. The poultry contributed significantly to the livelihoods of poor households; economically as an initial capital; as a protein source and for disposable income and exchange purposes; and socio-culturally for hospitality and exchange of gifts to strengthen social relationships. Limiting factors are animal diseases, food resource, housing conditions and predators. Thus, the economic and nutritional conditions of households can be improved by developing the local production potential. In order to reach this objective, a special attention should be paid to the food quality and management practice in general, including access to veterinary care. The genetic improvement is very important to protect local poultry breeds and increase their productivity in respecting the local breeding context.