Peri-Urban Small Ruminant Feeding in Ekiti State

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Abstract

*This study appraised the socio-economic strata of small ruminant keepers in Ekiti State with emphasis on the feedstuffs fed to the animals. The following towns: Ado Ekiti, Ikole Ekiti, Itapa Ekiti, Ode Ekiti, Omuo Ekiti, Aramoko Ekiti, Ijero Ekiti and Igbara Odo which represented the four geographical zones of Ekiti State were selected for this study. Ninety structured questionnaires were administered to small ruminant keepers in the towns at 10 per town. Data were collected on the socio-economic strata of the respondents with emphasis on the feedstuffs fed the animals. A proximate analysis was also carried out on some of the feedstuffs to determine their nutritive value. Descriptive statistical tools were used to interpret the data. About 78% of the respondents kept goats alone, 2% sheep alone while 20% kept a mixed stock of sheep and goat. About 54.4% of the respondents got their initial stock from the local market, 28.9% had theirs as gifts and the rest from contractual agreement and government farms. The largest percentage (38.95) of the respondents had tertiary education. The predominant mode of production was the extensive system and the average flock size was 6 per household. The predominant feedstuffs fed to the animals were the household wastes and agro-industrial by-products such as peels of cassava, yam, plantain and other by products of cassava processing. Proximate analysis showed that the predominant feedstuffs cannot satisfy the energy, protein and mineral requirements of the animals, hence the need for a supplementation with other feedstuffs such as *Gliricidia sepium* and *Leucaena leucocephala* which are readily available in the study area.*

Key Words: Peri-urban, small ruminant, feeding, Ekiti-State

Introduction

The beneficial roles of livestock in production of meat, milk, eggs in alleviation of poverty, reducing malnutrition and conserving natural resources, has not been adequately exploited (Hugo *et al*; 2002). Part of the solution in Nigeria is an increase in the production of small ruminant animals, mainly sheep and goats which are found in most of the households in Southern Nigeria (Sumberg and Cassaday, 1985).

Ruminants can play an active role in converting feedstuffs of no dietary value to man, to meat and milk of high nutritive value for man. They are slow growing because they cannot survive on grass alone (Adegbola, 1985, Ikwuegbu *et al*, 1994). Feeding and management of goat and sheep at household levels need to be appraised to facilitate appropriate intervention for enhancing production in Ekiti State. This study was therefore conducted specifically to identify

the various feedstuffs available for small ruminant production in Ekiti State and generally to ascertain the goat rearing practices among farmers in Ekiti State.

Materials and Methods

There are five geographical zones in Ekiti. These are: Ekiti North, Ekiti South, Ekiti East, Ekiti West and Ekiti Central. Two towns were selected from each of the zones except for Ekiti Central where only one town was picked to make a total of nine towns surveyed. The towns selected were: Itupa Ekiti, Ikole Ekiti, (Ekiti North); Ode Ekiti, Omuo Ekiti (Ekiti East); Ilawe Ekiti, Ighara Odo (Ekiti South); Aramoko Ekiti, Ijero Ekiti (Ekiti West) and Ado Ekiti (Ekiti Central). The sampled area within each town was randomly selected. The study was carried out through the use of structured questionnaires. A total of 90 questionnaires were used for the study and they were randomly distributed to households of ten per town. Data collected from the survey were analyzed using descriptive statistics. A chemical analysis (AOAC, 1990) was also carried out on some of the feedstuffs collected from the towns. Each sample of the feedstuffs was digested using the Ash Method (AOAC, 1990). Calcium, Cu, Fe, Mn, Hg, Pb, Zn, Cr, Co and Ni in the digest were analysed at the Central Science Laboratory, O.A.U. using Atomic Absorption Spectrophotometer Alpha 4 Model, Serial No 4200.

Results and Discussion

Table 1 shows the general information on the respondents expressed in percentages. About 78% of the respondents kept goat alone, mixed stock of sheep and goat (20%). Just 2% of the respondents kept sheep alone (Fig 1). This is similar to what was reported (Odeyinka, 1996) that goats were kept in preference to sheep in some selected towns in Osun State. This could

be due to the use of goats for several religious purposes and traditional rites and festivals. Six was the modal flock size among the respondents. Only less than 10% of the respondents had more than 20 goats. This shows that small holder goat production is common in the state as reported elsewhere (Otchere, 1985; Ikweghu *et al.* 1994) for smallholders in tropical Africa. About 39% of the respondents had tertiary education; 18.9%, 23.3% and 18.9% however had secondary, primary education and no formal education respectively, (Table 1). This reflects the trend in Ekiti State where education is highly valued as noted for states in South West Nigeria (Odeyinka and Ajayi, 2004). For the purpose of adopting new technologies education is an important factor which favors innovations (Torimiro and Dionco-Adetayo, 2004). Both males and females were involved in small ruminant production but more males (55.6%) were involved. This is similar to the situation in Osun State (Odeyinka, 1996) but in contrast to what was reported for Oyo State (Odeyinka and Okunade, 2005). Raising of small ruminants was common among adults of 30-50 years age bracket representing 62.2% of the total respondents. This is in agreement with what was reported by Chidebelu and Ngondjou (1997) in the Eastern part of the country. This implies that small ruminant production seems to

OWNERSHIP PATTERN OF SMALL RUMINANTS IN EKITI STATE

Figure 1: Ownership pattern of small ruminants

be an adult business in Ekiti State. About 62% of the respondents practiced extensive system of management while 29% and 9% practiced semi-intensive and intensive respectively (Table 2).

Table 3 shows the list of feedstuffs fed to goats in each sampled area. Peels of cassava, yam, plantain and leaves were common to all

areas and these feedstuffs represent the predominantly utilized feedstuffs in all the surveyed area. Little differences in the feedstuffs could be seen in the forage groups where certain vegetables which are consumed by humans in other areas are fed to the animals in some other

Table 1: General information about the respondents

Criterion	Response	No. of respondents	Percentage
Education Level	None	17	18.9
	Primary	21	23.3
	Secondary	17	18.9
	Tertiary	35	38.9
	Total	90	100
Sex	Male	50	55.6
	Female	40	44.4
	Total	90	100
Age	10-30 yrs	10	11.1
	30-50yrs	56	62.2
	50-70yrs	20	22.2
	>70yrs	4	4.4
	Total	90	100

Table 2: Scope of production

	Response	No. of respondents	Percentage
System of management	Intensive	8	8.9
	Semi-intensive	26	28.9
	Extensive	31	34.4
	Subsistence	25	27.8
Source of initial Stock	Local market	49	54.4
	Government farm	14	15.6
	Gifts	26	28.9
	Contractual Agreement	1	1.1
	Total	90	100

Table 3: List of feed stuffs fed to sheep and goats

Towns	Feedstuffs
Ado-Ekiti	Cassava peelings, Yam peelings, Maize stover, Plantain leaves, Pawpaw leaves, Whole grain maize
Ode-Ekiti	Cassava peels, Yam peels, Water leaf, Plantain peels, Elephant grass, Pawpaw leaves, Leucaena, Whole maize grain
Ademo-Ekiti	Cassava peels, Yam peels, Plantain peels, Guinea grass, Tridax, Maize
Roko-Ekiti	Whole maize, Cocoyam peels, Yam peels, Leucaena, Elephant grass
Aramoko-Ekiti	Yam peels, Cocoyam peels, Cassava peels, Cowpea shaft, Potato leaves, Maize stover
Ijero-Ekiti	Whole maize, Plantain leaves, Plantain peels, Yam peels, Cassava peels, Gamba grass, Giliricidia
Iawe-Ekiti	Cassava chips, Palm leaves, Yam peels, Cassava peels, Maize stover, Cowpea shaft

Table 4: Proximate Analysis of Feedstuffs fed to sheep and goats in Ekiti State

%	Yam Peels	Cassava Peels	Plantain Peels	Plantain leaves	Pawpaw leaves	Cowpea husk	Soybean husk	Maize stover
DM	81.49	82.22	81.47	84.46	84.49	82.02	83.64	84.84
Analysis on DM basis								
OM	94.32	92.61	94.22	88.77	78.90	93.96	93.76	95.99
Ash	5.68	7.39	5.78	11.23	21.10	6.04	6.24	4.01
CF	4.87	12.86	3.24	21.47	4.60	34.06	37.23	28.78
EE	7.84	9.37	9.35	13.77	12.58	6.83	6.85	8.94
CP	9.02	8.38	9.02	11.97	11.68	12.60	3.57	5.14
NFE	72.99	62.00	72.61	41.56	50.04	40.47	46.11	53.13

parts of the state. Example of this is the water leaf fed to goats in Ode Ekiti.

Feedstuffs fed to goats in Ekiti State (Table 3) are mostly part of the feed resources that have not been optimally utilized in small ruminant

rearing but are used in Ekiti State. Ademosun, (1994) suggested the inclusion of these groups of feedstuffs as strategies to improve the feeding of animals most especially in the dry season when the quality of herbage is low and animals tend to

lose weight. The suggestion supported the report of Sumberg and Chrysaday (1985), who advocated for more use of household wastes combined with cassava peels or other crop by-products. The predominant feedstuffs which were cassava and Yam peels were the most abundant feed resources for sheep and goats apart from grasses and this is as a result of the food habit of the people in the area. Pounded yam is the main staple food in the state and this guarantees the availability of yam peels in the areas at all times. Many of the farmers especially males are engaged in food and tree crops production, and cassava is one of the major crops which they can be processed into "garri" and other cassava products. This also ensures the availability of cassava peels. These feedstuffs are different from those fed in Osun State (Odeyinka and Ajayi, 2004).

Tables 4 and 5 show the chemical and mineral compositions of the feedstuffs. Most of the feedstuffs were high in crude protein and minerals. Feedstuffs such as plantain peels and foliage, cassava peels, and pawpaw leaves could

be good sources of iron and calcium in the diet of small ruminants.

Conclusion and Recommendation

It is observed that the small ruminant production in Ekiti State is mainly characterized by smallholder production in which holders have a small flock size mostly less than ten. Goats are predominantly kept and reared under the extensive system of management. The use of multi-purpose trees as fodder for ruminants is not popular in Ekiti State. This should be introduced to the farmers to increase the nutritional value of the feedstuffs.

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Table 5: Mineral Analysis of sheep and goats Feedstuffs in Ekiti State

Minerals (ppm)	Yam Peels	Cassava Peels	Plantain Peels	Plantain leaves	Pawpaw leaves	Cowpea husk	Soybean husk	Maize stover
Hg	2.09	2.67	2.59	2.48	2.81	1.88	2.44	2.50
Co	0.05	0.10	0.05	0.06	0.08	0.04	0.08	0.08
Cu	2.26	5.87	1.66	3.07	3.34	2.14	2.16	2.54
Fe	7.90	28.9	15.7	53.8	30.30	34.7	9.50	6.10
Mn	1.02	1.82	0.83	3.30	1.46	2.20	0.23	0.20
Ni	0.80	2.10	1.00	3.60	1.80	2.5	0.70	0.30
Cr	0.07	0.12	0.13	0.04	0.06	0.02	0.06	0.07
Zn	0.01	0.01	0.02	0.01	0.02	0.02	0.02	0.01
Pb	0.00	4.53	0.00	0.00	0.00	5.65	12.30	0.00
Ca	0.09	1.99	0.00	4.38	34.30	1.68	2.55	0.10

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