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## HARVESTING AND FEEDING OF DISPERSED FORAGE PLANTS TO SMALL RUMINANTS BY YOUTHS IN NSUKKA URBAN, ENUGU STATE, NIGERIA

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### ABSTRACT

*The study was designed to assess harvesting and feeding of dispersed forage plants to small ruminants by youths in Nsukka urban of Enugu State, Nigeria. Data for the study were collected from 95 youths through the use of a structured interview schedule. Frequency distribution, percentage and mean statistic were used in the analysis of the data. The findings revealed that a greater proportion (72.63%) of the youths were at their very tender age (10 – 19 years) with a mean age of 12 years. Both male and female youths were involved in the harvesting and feeding of dispersed forage plants in the study area and they did not harvest for commercial purposes. All (100.0%) the respondents had some training for skill acquisition in identifying, selecting, harvesting and sorting of dispersed forage plants. Their major sources of training included their parents and peers. Harvesting was normally carried out once per day and preferably, in the morning hours. Apart from harvesting the dispersed forage plants for their parents, they also participated in feeding the small ruminants. Height of some dispersed forage plants, seasonal variation and snake bite / insect sting were the major problems militating against effective harvesting. It was suggested that the Department of Agricultural Extension and the Department of Animal Science, University of Nigeria, Nsukka should come-up with small ruminants feeding improvement programme through which the youths could be better informed, especially, about identification, selection, harvesting, sorting and storage of dispersed forage plants*

**Key words:** Forage plants, Nsukka-Urban; Ruminants, Nigeria.

### INTRODUCTION

In many parts of Africa and some other developing countries, the Youths are seen as individuals who are not yet married, still depend on their parents for social and economic survival. Proper development of the youths invariably means a better future for the society. They play major role in agriculture and community development through giving adequate support to their parents and / or being active members of various organizations such as the young farmers' clubs, livestock clubs and horticultural clubs in their different schools.

They act as a conduit for the transfer of new technologies to their parents and other farmers within their communities (Ajayi, 1997).

Small ruminants (sheep and goats) rearing is an integral part of the cultural life and farming system of the farm-families in Nigeria and as a result; their husbandry has remained largely traditional (Ezeanyika, 1995). In southwestern Nigeria, sheep and goats are allowed during the day and throughout the seasons to roam about the villages; feeding on household wastes, plant residues and road-side herbage crops. Whereas, tethering of goats and sheep is common in the eastern part of Nigeria, especially, Nsukka agricultural zone of Enugu

state. They are tethered in the zone to avoid destruction of crops during the growing season since the farm-families practise compound farming system. Typically, individuals keep 2-4 breeding goats and/or sheep in which investment is minimal (Okali and Upton, 1984; Ezeh *et. al.*; 1986; Ajayi, 1995).

Small ruminants play an important role in many aspects of farmer's life. They use the land around the house, utilize agricultural by-products, produce meat, act as a live saving in case of the farmer's urgent cash requirement (for school fees, land preparation cost and sickness etc) and they produce dung to fertilize the land. They also play key role in religious festivities (Animal Productions system Group, 2001).

The major problems associated with the improvement of small ruminants are prevalence of pests and diseases, poor management practices, poor genetic quality and inclement weather (Oyenuga, 1986a; Ogbuishi, 1996). Apart from the above listed problems, the greatest limitation to the intensification of sheep and goats production, especially, in Nsukka agricultural zone of Enugu State, is the scarcity of feeds (e.g. forage plants). Intensively managed animals have to be provided with all the necessary feed requirements in order to perform well.

Small ruminant's nutrition is greatly affected by adverse seasonal variations (Oyenuga, 1986a). During dry season, they suffer setback in maturity and production because forage plants which are their main sources of feed, do not flourish, especially, in Nsukka. The agro-ecological zone of Enugu State. Harvesting of dispersed forage plants is always very tedious and time consuming. The available forage plants are scattered in all directions in small bits. Even under the most favourable conditions, they can be inadequate for forage production (Ogbuishi, 1996).

Despite the tediousness and time consuming nature of harvesting dispersed forage plants, youths (young boys and girls) in Nsukka agricultural zone of Enugu State, are found everyday and everywhere fetching them. The question now relates to the commercialization of forage plants, skill acquisition for the

identification and harvesting of appropriate dispersed forage plants, sorting of forage plants by the youths and the extent of their involvement in the various management practices of small ruminants in their households. Do the youths in Nsukka agricultural zone harvest dispersed forage plants for sale? Are they taught how to identify, harvest and sort forage plants? What is the extent of their involvement and participation in the various management practices of small ruminants in their different households? To provide answers to the questions posed above, this study was designed to assess harvesting and feeding of dispersed forage plants to small ruminants by youths in Nsukka urban of Enugu State, Nigeria. Specifically, the study was designed to:

1. describe the personal characteristics of the youths who are involved in the harvesting and feeding of dispersed forage plants to ruminants in Nsukka urban of Enugu State;
2. determine the major purpose of harvesting and source(s) of skill acquisition for selecting, harvesting and sorting of appropriate dispersed forage plants by the youths;
3. examine the youths' pattern of harvesting dispersed forage plants in the study area;
4. determine the extent of youths' involvement and participation in small ruminants management practices in the study area and
6. determine the major problems associated with harvesting and feeding of dispersed forage plants to small ruminants by youths in Nsukka urban.

## METHODOLOGY

The study area was Nsukka urban in Nsukka Local Government Area (LGA) of Enugu State. Nsukka LGA is located in the northeast side of Enugu-Nsukka Plateau. Nsukka urban lies within the centre of Nsukka LGA and the area lies between latitudes  $6^{\circ}45'$  and  $7^{\circ}00'$  and longitudes  $7^{\circ}36'$  and  $7^{\circ}25'$ . The land area of Nsukka urban is about 45.38 Km<sup>2</sup> (Ofomata, 1975). It comprises the following differing major sections or clusters: the University of Nigeria Campus, Onuiyi, Odenigbo, Odenigwe, Ogige market area, Ugwuoye, Umuoyo, Government Reserved Area (GRA), Ngugu, Obukpa, Ihe/Owerre, Umakashi and Isiakpu

(Ajayi and Aneke, 2002;). In each of these clusters, small ruminants production is prevalent and youths are always seen roaming about, looking for dispersed forage plants to harvest for their households' animals. Out of the above listed 13 clusters, the University of Nigeria Campus was purposively selected because of its expand of land area and possession of more forage plants than any of the other clusters. Besides, the University of Nigeria Campus is surrounded by many communities where small ruminants are being reared and many youths are always found around and within the campus harvesting dispersed forage plants for their households' animals. The University of Nigeria campus was sub-divided/clustered into Odimgate, Franco hostel, Farm operation, Odenigwe gate and Stadium/Umunkanka. These five clusters were purposively included in the study. From each of these five clusters, twenty different youths were sighted (while cutting/harvesting forage plants) over a period of one month, on different days and at different time of the day. That means that a total of 100 youths were sighted and they were all purposively interviewed for the study. Data were collected through the use of interview schedule. The interview schedule was divided into five different sections on the basis of the five objectives of the study. The variables were measured as follows:

(1) To fulfill objective one, the respondents' personal characteristic variables such as age (years); sex (male or female); living status of the parents (alive or dead); level of education (No formal education or formal education); position in the family (1<sup>st</sup> and 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup>); harvesting experience (1 – 5 years, 8 – 10 years and 11 – 15 years); types of small ruminant possessed by the households (goats only, sheep only or goats and sheep combined) and number of small ruminants owned per household (no of goats, no of sheep) were measured.

(2) To fulfill objective two, the respondents were asked to indicate whether or not, they normally cut dispersed forage plants for commercial purpose (for sale). They were also asked to indicate who initiated them into harvesting/cutting of dispersed forage plants and

whether or not, training was acquired (yes or no).

3. The respondents' pattern of harvesting dispersed forage plants was measured in terms of the household members involved in harvesting dispersed forage plants; frequency of harvesting per day; the most favourable time for harvesting per day and frequency of harvesting per week.

4. The extent of youths' involvement and participation in small ruminants management practices was measured by asking the respondents to indicate their extent of involvement and participation in small ruminants management practices on a 4 – point Likert – type scale. Their responses and the corresponding weighted scores were as follows: to no extent = 0; to a little extent = 1; to some extent = 2 and to a great extent = 3. The total and mean scores for each of the itemized 12 management practices were subsequently calculated (Table 4). (5) To achieve objective five, the respondents were asked to indicate the problems associated with harvesting and feeding of dispersed forage plants on a 2 – point Likert – type scale. Their responses and the corresponding weighted scores were as follows: minor problem = 1 and major problem = 2. The total and mean scores for each of the itemized 13 perceived problems were subsequently calculated (Table 5). One hundred copies of the interview schedule were administered by the researchers and five enumerators. However, only 95 out 100 copies of the interview schedule were duly completed and found analyzable. Data were analysed through the use of frequency, percentage and mean statistic.

## RESULTS AND DISCUSSION

### Personal Characteristics of the Respondents

Entries in Table 1 show that majority (72.63%) of the respondents were between 10 – 19 years of age, while 20.00% fell within the age range of 0 – 9 years and 20 – 29 years of age accounted for 7.37%. The mean age was 12 years. This implies that a greater proportion of the respondents were relatively young. Age is an important variable that influences people's attitude, skill and aspiration (Obioha, 1995). At this tender age, they are most likely to be highly

responsive to any extension improvement programme on small ruminant feeding.

Majority (94.74%) of the respondents were males, while the remaining 5.26% were females. This implies that any extension improvement programme on small ruminants' feeding should include both male and female children in the study area. Entries in Table 1 further indicate that majority (60.00%) of the respondents had between 5 – 8 family size, while those that had a family size of 1 – 4 people accounted for 40.00%. Their mean family size was 5 people. The larger the family size, the more is the tendency for labour availability for harvesting of dispersed forage plants.

Table 1 also reveals that majority (60.79%) of the respondents were still in primary schools, while 33.69% were still in secondary schools. About 5% of them had

finished secondary school education. A greater proportion (84.22%) of them were between 1<sup>st</sup> and 5<sup>th</sup> positions in their respective families. Above 95% of them were still having their parents alive (Table 1). Data on their dispersed forage plants harvesting and feeding experience indicated that those that had 1 – 5 years of experience accounted for 76.84%, while 21.05% had 6 – 10 years of experience. The remaining 2.11% had 11 – 15 years of experience. Their mean age experience was 4 years.

It is also evident from Table 1 that majority (87.37%) of the respondents' parents kept goats only, while the remaining 12.63% kept goats and sheep together. The number of goats kept per household was 8, while the mean number of goats plus sheep kept together was 9. Fathers (76.84%) owned the majority of the small ruminants

**Table 1: Percentage Distribution of Respondents on the Basis of their Personal Characteristics (n = 95)**

Personal Characteristics	(No)	(%)	$\bar{X}$
<b>Age (Years)</b>			
0 – 9	19	20.00	
10 – 19	69	72.63	12.0
20 – 29	7	7.37	
<b>Sex</b>			
Male	90	94.74	
Female	5	5.26	
<b>Parents Being Alive</b>			
Father alive	92	96.84	
Mother alive	91	95.79	
<b>Family-size</b>			
1-4	38	40.00	5.0
5 – 8	57	60.60	
<b>Level of Education</b>			
Still in Primary School	58	60.79	
Still in Secondary School	32	33.69	
Had finished Secondary School	5	5.62	
<b>Types of Small Ruminant Owned</b>			
Goats only	83	87.37	
Sheep only	0	0.00	
Goats plus sheep	12	12.63	
<b>Number of Small Ruminants Kept</b>			
Goats	701	94.22	8.0
Sheep	43	5.78	0.1
Total (goats + sheep)	744	100.00	9.0
<b>Ownership of Small Ruminants</b>			
Fatherly alone	73	76.84	
Mother alone	4	4.21	
Father and mother jointly	18	18.95	

### Purpose of Harvesting and Source(s) of Skill Acquisition

According to Table 2, all (100.00%) of the respondents harvested dispersed forage plants for their households' sheep and goats and not for commercial purposes.

Table 2 also shows that majority (96.84%) of the respondents were initiated into harvesting of dispersed forage plants when they were between 4 and 9 years old, while the remaining 3.16% were initiated when they were between 10 and 15 years old. A greater proportion (86.32%) of the respondents were initiated by their parents. About 6% were initiated by their peers, while 7.00% were initiated by their senior brothers/sisters. All (100.00%) the respondents actually acquired training on how to harvest and the choice of forage plants to be harvested, while majority (75.79%) acquired training from their parents. Only 15.79% and 8.42% acquired training from their peers and their senior brothers/sisters, respectively (Table 2).

Table 2 also indicates that the nature of training received by 80.00% of the respondents was one by one identification and cutting of forage plants, while the remaining 20.00% were taught how to do bulk harvesting and careful sorting out of desired forage plants. Majority

(84.21%) of the respondents indicated that they did go to the field frequently with their peers.

**Harvesting Pattern:** Entries in Table 3 reveal that in many of the respondents households, only children and their fathers (71.58%) were involved in the harvesting of dispersed forage plants, while in others (24.21%), only the children were involved. Children, fathers and mothers were jointly involved in the remaining 4.21%. Table 3 also indicates that a greater proportion (83.16%) of the respondents harvested once every day, while the remaining 16.84% harvested twice per day. Entries in Table 3 further reveal that majority (82.11%) of the respondents harvested mostly in the evening. About 14% harvested mostly in the morning, while 4.21% harvested mostly in the afternoon. The observed variation in the time of harvesting was as a result of the fact that majority of the respondents were still students. They do go to school in the morning. Besides, during the day, according to them, there is always high incident of snake bites, scurrying and rashes due to hot weather and hence, respondents tend to harvest during cool evening when there would be less snake bite and scurrying.

**Table 2: Percentage Distribution of Respondents on the Basis of Purpose of Harvesting and Source(s) of Skill Acquisition (n = 95)**

Variable	(No)	(%)	$\bar{X}$
<b>Purpose of Harvesting</b>			
To feed our household's sheep and goats	95	100.0	
<b>Age of Initiation into Harvesting (Years)</b>			7.0
4 – 9	92	96.84	
10 – 15	3	3.16	
<b>Who is the Initiator?</b>			
My parents (fathers/mothers)	82	86.32	
My peers	6	6.32	
My senior brothers/sisters	7	7.36	
<b>Acquisition of Training</b>			
Yes	95	100.00	
No	0	0.00	
<b>Source(s) of Training</b>			
My parents	72	25.79	
My peers	15	15.79	
My senior brothers/sisters	8	8.42	
<b>Nature of Training Received</b>			
One by one identification and cutting of forage plants	76	80.00	
Bulk harvesting and careful sorting of desired forage plants	19	20.00	
<b>With who do you frequently go out to harvest forage plants?</b>			
With my brothers/sisters	15	15.79	
With my peers	80	84.21	

**Table 3: Percentage Distribution of Respondents According to their Pattern of Harvesting Dispersed Forage Plants (n = 95)**

Variable	(No)	(%)
<b>Household Members Involved in the Harvesting of Dispersed Forage Plants</b>		
Children only	23	24.21
Children + father only	68	71.58
Children + father + mother	4	4.21
<b>Frequency of Harvesting/Day</b>		
Once	79	83.16
Twice	16	16.84
<b>The Most Favourable Time of the Day for Harvesting</b>		
Morning	13	13.68
Afternoon	4	4.21
Evening	78	82.11
<b>Frequency of Harvesting / Week</b>		
Every day	95	100.00
Twice	0	0.00

**Table 4: Mean Scores of the Extent of Youths' Participation in the Management practices of Small Ruminants (n = 95)**

Management Practice	( $\bar{X}$ ) Score
Harvesting of dispersed forage plants	3.0***
Feeding of small ruminants with dispersed forage plants	3.0
Pest and disease management	2.0**
Provision of water	2.0
Removal of manure and washing of the floor	2.0
Veterinary services	2.0
Construction of housing units	1.0*
Tethering	1.0
Record keeping	1.0
Breeding programme	1.0
Marketing	1.0
Disposal of carcass	1.0

\*\*\* = To a great extent; \*\* = To some extent; \* = To a little extent.

#### Small Ruminants Management Practices and Extent of Participation by the Youths

Table 4 reveals that the youths actively participated in the harvesting of dispersed forage plants ( $\bar{X} = 3.0$ ) and feeding of small ruminants ( $\bar{X} = 3.0$ ). According to the table, pests and diseases management ( $\bar{X} = 2.0$ ), provision of water to small ruminants ( $\bar{X} = 2.0$ ), removal of manure and washing of the floors. ( $\bar{X} = 2.0$ ) and veterinary services ( $\bar{X} = 2.0$ ) were carried out to some extent by the youths. The table further reveals that the youths participated in the construction of housing

units ( $\bar{X} = 1.0$ ), marketing ( $\bar{X} = 1.0$ ) and disposal of carcass ( $\bar{X} = 1.0$ ) to a little extent.

#### Problems Associated with Harvesting of Dispersed Forage Plants

Table 5 shows that the respondents identified height of some forage plants ( $\bar{X} = 2.0$ ), seasonal variation ( $\bar{X} = 2.0$ ), snake and insect bite/sting ( $\bar{X} = 2.0$ ) and scrawling of the body and rashes ( $\bar{X} = 2.0$ ) as the major constraints to effective harvesting and feeding of dispersed forage plants to small ruminants in the study area.

**Table 5: Mean Scores of Problems Associated with Harvesting and Feeding of Dispersed Forage Plants to Small Ruminants (n = 95)**

Problem	Mean ( $\bar{X}$ ) Score
Height of forage plants	2.0**
Seasonal variation	2.0**
Snake and insect bite / sting	2.0**
Scratching and rashes	2.0**
Indiscriminate bush burning	2.0**
Cost and sharpening of sickle	1.0*
Rotting of forage plants	1.0*
Time factor	1.0*
Distance between home and field	1.0*
Transportation back home	1.0*
Quarrelling among peers	1.0*
Theft	1.0*

\*\* = A major problem, \* = A minor problem.

Those problems that were considered minor included indiscriminate bush burning ( $\bar{X} = 1.0$ ), space for storing excess forage plants ( $\bar{X} = 1.0$ ), rotting of forage plants ( $\bar{X} = 1.0$ ), time factor ( $\bar{X} = 1.0$ ), distance between home and harvesting spot ( $\bar{X} = 1.0$ ), transportation back home ( $\bar{X} = 1.0$ ), identification of edible forage plants ( $\bar{X} = 1.0$ ), quarrelling among peers ( $\bar{X} = 1.0$ ) and theft ( $\bar{X} = 1.0$ ).

## CONCLUSION

On the basis of the findings of the study, it was concluded that: a greater proportion of the youths were relatively young and at this tender age, they are most likely to be highly responsive to any extension improvement programme on small ruminants feeding; both male and female youths were involved in the harvesting and feeding of dispersed forage plants in the study area. This implies that any extension improvement programme on harvesting and feeding of dispersed forage plants in the study area should focus on both male and female youths; the youths in the study area were not harvesting/cutting dispersed forage plants for commercial or money-making purposes; they were initiated mostly by their parents and they actually acquired training/skill on how to harvest dispersed forage crops; harvesting of

dispersed forage plants was carried out once in a day and mostly, in the morning when the weather would be more favourable; the youths did not only harvest the dispersed forage plants but they also participate actively in feeding them to the small ruminants and height of some dispersed forage plants, seasonal variation and incident of snake bite/insect sting were the major problems confronting effective harvesting of dispersed forage plants.

It was therefore recommended that the Department of Agricultural Extension in collaboration with the Department of Animal Science, University of Nigeria, Nsukka, should come-up with small ruminant feeding improvement programme through which the youths could be better informed, especially, about harvesting, sorting and storage of dispersed forage plants.

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