IDENTIFICATION AND UTILIZATION OF NATIVE FORAGES BY HOUSEHOLDS IN BORGU LOCAL GOVERNMENT AREA OF NIGER STATE, NIGERIA

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ABSTRACT
A survey was conducted during the 2024 rainy season using structured questionnaires which were administered to 60 randomly selected respondents to evaluate the knowledge of households on identification, utilization and preference of uncultivated forages in savanna areas of Borgu Local Government Area, Niger State, Nigeria. Data collected were analyzed using simple statistical tools such as frequency counts and percentages. A total of seven (7) naturally occurring forage species were encountered comprising three (3) legumes species namely; Casia tora (herb), Parkia Biglobosa (tree) and Gliricidia sepium (tree), one (1) grass species (Pennisetum purpureum) two (2) forbs species; Corchorus olitorius (herb) and Hibiscus sabdariffa (herb). The results revealed that all respondents (100%) consumed forages with majority (40% and 86.70%) consumed in cooked form and along with other ingredients, respectively. Forage parts consumed by households included; leaves, fruits, flowers, stems and roots with leaves being the most (41.70%) consumed part while the least (8.30%) consumed part were flowers. Effects of consumed forages to the body varies among the respondents with majority (35%) agreed on health benefits while the least (8.30%) agreed on easy child birth as a benefit. Most of the respondents (68.30%) obtained forages during the rainy season which is the period of abundant supply of these plants particularly the herbaceous species while (31.70%) of respondents obtained forages during the dry season. The study indicated high level of awareness among households and effective utilization of uncultivated forages for various benefits.
Keywords: Utilization, awareness, native forages, households

INTRODUCTION

Grazing lands in Nigeria, including natural wetlands (Fadama), grasses, woodlands and forest reserves are estimated to cover about 32.42 million hectares, while cultivated crop-lands amount to about 39.41 million hectares. These lands provide substantial amount of crops, forages and fodders as major sources of feed for the country's ruminant livestock, both domestic and wildlife including human needs (Gómez, 2013; Olawoye and Kubkomawa, 2018).

The massive biomass of the country with extensive arable land and diverse ecological zones teeming with abundant crops and forage species makes sustainable food system achievable for the population. Rural communities across Nigeria for long ages have used large numbers of locally adaptable crops for nutrition, medicinal and means of livelihood (FAO, 2023). Among the prominent cause of malnutrition in Nigeria is lack of access to quality food particularly in rural areas where own farm production and other uncultivated forages are among the major means to food supply.

Several indigenous and exotic forage species have been investigated and evaluated for inclusion in ruminant feeding system in Nigeria (Fadiyumu *et al.,* 2011). The importance of native forage species as alternative food resources to household in the study area are undocumented and lacks knowledge on their classification, characterization and utilization. This study focuses on the classification, characterization and utilization of native forages amongst the households.

MATERIALS AND METHODS

A survey was conducted during the rainy season period (July-September) of 2024 in Borgu Local Government Area of Niger State, Nigeria. Borgu LGA is located between latitudes 9°53′N and longitudes 4°31′E. The region's average temperature and humidity is 30^0C and 38% respectively with an annual rainfall of 200mm. The vegetation of the area is Savannas type with farming as the major activity of the people (Ross, 2011).

A structured questionnaire was designed for data collection. Ten (10) questionnaires in each location were distributed randomly among the households in six districts (Lumma, Tunga Bube, Wawa, Mago, Rofia and Agwara). The questionnaires were read to them and their responses were recorded at the appropriate column. A total of 60 respondents were obtained to evaluate level of awareness, usage and utilization method of forage species in the area. Statistical tools such as frequency distribution and percentages (SPSS, 2015) were used in analyzing the collected data.

RESULTS AND DISCUSSION

A total of seven (7) naturally occurring forage species (Table 1) were encountered comprising three (3) legumes species namely; *Casia tora* (herb), *Parkia biglobosa* (tree) and *Gliricidia sepium* (tree), one (1) grass species (*Pennisetum purpureum*) two (2) forbs species; *Corchorus olitorius* (herb) and *Hibiscus sabdariffa* (herb). These species are annual and perennial types as most authors (Deridder and Breman, 1993; Muftau and Musa, 2020) reported that in the Sudan and Sahel rangelands, the vegetation consisted mainly of annual and perennial plants.

Table 1: Botanical description of some selected naturally occurring forages in the study area during the 2024 rainy season

Common names	Local names (Hausa)	Botanical names	Family
Baobab	Kuka	*Adansonia digitata*	Malvaceae
Sickle senna	Tafasa	*Casia tora*	Fabaceae
Locust bean	Doruwa	*Parkia biglobosa*	Fabacea
Jute	Lalo	*Corchorus olitorius*	Malvaceae
Sorrel	Yakuwa	*Hibiscus sabdariffa*	Polygonaceae
Elephant grass	Ciyawa giwa	*Pennisetum purpureum*	Poaceae
Quick stick	Lolo	*Gliricidia sepium*	Fabaceae

Source: Field survey, 2024

Table 2 revealed that all the respondents (100%) consumed forages with majority (40% and 86.70%) consumed in cooked form and along with other ingredients respectively. Plant species are important for daily uses such as source of feed, building materials and medicine (Ma *et al*., 2021) which conform to the results of this present study. Forage parts consumed by households includes; leaves, fruits, flowers, stems and roots with leaves to be the most (41.70%) consumed part while the least (8.30%) consumed part were flowers. This is in line with the findings of Ganfa *et al*. (2020) who reported that leaves were dominant plant parts consumed. All the respondents had various form of effects of forages consumed in the body with majority (35%) agreed on health

Table 2: Forage usage, method of utilization and preference

Items	n=60 frequency	Percentage (%)
A. Forage consumption		
Yes	60	100
No	-	
B. Forms of forage consumed		
Fresh	18	30
Dry	18	30
Cook	24	40
C. How forages are consumed		
Forages alone	8	13.30
Forages with other ingredients	52	86.70
D. Part of forages consumed		
Leaves	25	41.70
Fruits	16	26.70
Flowers	5	8.30
Stems	6	10
Roots	8	13.30
E. Effect of consumed forages to the body		
Growth promoter	15	25
Health benefits	21	35
Strength/stress reducer	10	16.70
High milk secretion during lactation	9	15
Easy child birth	5	8.30
F. At what season are forages available?		
Dry	19	31.70
Rainy	41	68.30

Source: Field survey, 2024

benefits while the least (8.30%) agreed on easy child birth as benefit. This supports the observation of Oluborode *et al*. (2022) who reported that plant species provides man with diverse benefits. Most of the respondents

(68.30%) obtained forages during the rainy season which is the period of abundant supply of these plants particularly the herbaceous species while (31.70%) of respondents obtained forages during the dry season. This is in line with the findings of Heuze and Tran (2011) who reported that browse species are particularly available for usage during the cool and hot dry season.

CONCLUSION

Extensive arable lands provide substantial amount of crops, forages and fodder as major sources of feed for the country's ruminant livestock, both domestic and wildlife and human needs. This study revealed the importance of forage species and identified different forages that are utilized by households. The nutritional potential of these forage species need to be emphasized to communities so as to promote their utilization, although, people in the study area have knowledge about effective utilization of indigenous forage species for various purposes. Management practices such as fertilization, irrigation, conservation and proper storage are necessary to sustain the all year round production of these uncultivated forage species in the country.

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