

## Ethnobotanical Study on Medicinal Plants and Wild Edible Fruits Sold in Yola North, Yola South and Fufore Markets, Adamawa State

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### ABSTRACT

Medicinal plants and wild edible fruits are vital sources of easily accessible therapeutic and fruits used by people. The study aimed to identify the various medicinal plants and wild edible fruits sold in Yola North, Yola South and fufore markets including the medicinal plant parts used. Ethnobotanical data were obtained using semi-structured questionnaires, observation and photographs. Descriptive statistics was applied to analyze the data. Seventy-three (73) medicinal plant species distributed across 33 plant families were documented, with Fabaceae (10) being the most represented, followed by Combretaceae, Caesalpinaceae, Lamiaceae, and Malvaceae (4) with Relative Frequency of Citation (RFC) ranging between 0.48 and 0.08. Nineteen (19) wild edible fruit species distributed across 11 families were documented, with fabaceae being the most represented followed by Lamiaceae, and sapotaceae. Fruits were mostly consumed raw (73.68%) with RFC ranging between 0.48 and 0.04. Bark was the most commonly medicinal plants parts used, 29 (39.72%), followed by Leaves 26 (35.61%).

**Key words:** Conservation, ethnobotanical, medicinal plants, and resources wild edible fruits

### INTRODUCTION

Plants are being used by man for the betterment of his life from time immemorial as man depend on them for food, medicine and shelter. Ethnobotany deals with the traditional use of plants by the ancient and indigenous people, either as food, shelter, medicine, hunting, clothing, cosmetic or ceremonies.

Ethno-medicine is a study of how traditional cultures make use of plants to treat and prevent various illness (Diliarosta *et al.* 2022). Ethno-medicines is used in developed countries to preserve cultures for rural inhabitants and playing a vital role by eradicating poverty and serving as a means of income in developing countries. The growing demand for medicinal plants globally has resulted to indiscriminate over-harvesting of these natural resources (Khan, 2016). Medicinal plants exhibit different levels of vulnerability to over-exploitation and disturbance, which effect, mostly depends on the part used; either the bark, leaves, twigs or stem, roots and the life form (Teixidor-Toneu *et al.* 2018).

Use of Medicinal plants varies according to different cultures worldwide (Kunwar *et al.* 2022; Turpin *et al.* 2022). Young people of the present generation prefer to go for

higher-paid jobs than practicing folk medicine, and do not find interest in having the traditional medicinal knowledge of plants (Kutal *et al.* 2021). In Nigeria, a gradual loss of the traditional knowledge about plants due to oral transmission have been reported, similarly, medicinal plants are at the risk of extinction through unsustainable exploitation (Mukaila *et al.* 2021). Traditional medicine is easy to access, effective in treatment and have an affordable cost compared to modern medicine (Duguma *et al.* 2019). Herbal markets supply medicinal plants and herbal treatment for diseases; it conserves bio cultural diversity by transferring traditional knowledge to future generations. It also serves as a useful tool to find new herbal recipes, which can be used to treat many diseases that is hard to be treated by standard health care systems (Uzun and Koca 2020).

Wild edible plants are those plants with edible parts that grow naturally on farmland and on uncultivated land (Nazar *et al.* 2022). Wild edible fruit (WEFs) is therefore, refer to fruit species that are neither cultivated nor domesticated but are easily accessible from various natural ecosystems which are being utilized for food by man (Nwala *et al.* 2023). These types of species grow in self-maintaining populations in natural or semi-natural ecosystems, without any form of human intervention, either through conservation or management (Guzo *et al.* 2023).

The consumption and reliance of man on the fruits species has gradually declined, as more imported fruits have been introduced, but many people in rural communities depend on these fruits as supplements for their basic need; including food. Some of these fruits are preserved for use in dry period or sold in rural markets (Zakawa *et al.* 2024). It is estimated that, above 700 million people worldwide are facing severe food deficiency, WEFs species are the best alternative source of food for such individuals at a period like this (Dejene *et al.* 2020). In rural communities of most developing countries, wild edible fruits are an inevitable source of diet and a vital part of healthcare practices, which they cannot survive without it (Yangdon *et al.* 2022).

All wild edible plants have played a major role in one way or the other in different geographical regions of the world and many rural communities of the developing countries make use of wild edible fruits which is the most common and easily assessable fruits consumed by such individuals, due to it availability, as people cannot afford some exotic fruits such as oranges, apple, graphs, avocados etc. (Dishan *et al.* 2017). Yiblet and Adamu (2023) opined that in recent years, a growing concerned has come forth by researchers to evaluate the various wild edible plants for their nutritional values.

Studies have indicated that the dietary use of wild edible fruits appears in numerous records especially in developing countries and some botanical studies and publications have emphasized on the diversity and food value of wild edible fruit species (Chakravarty *et al.* 2016).

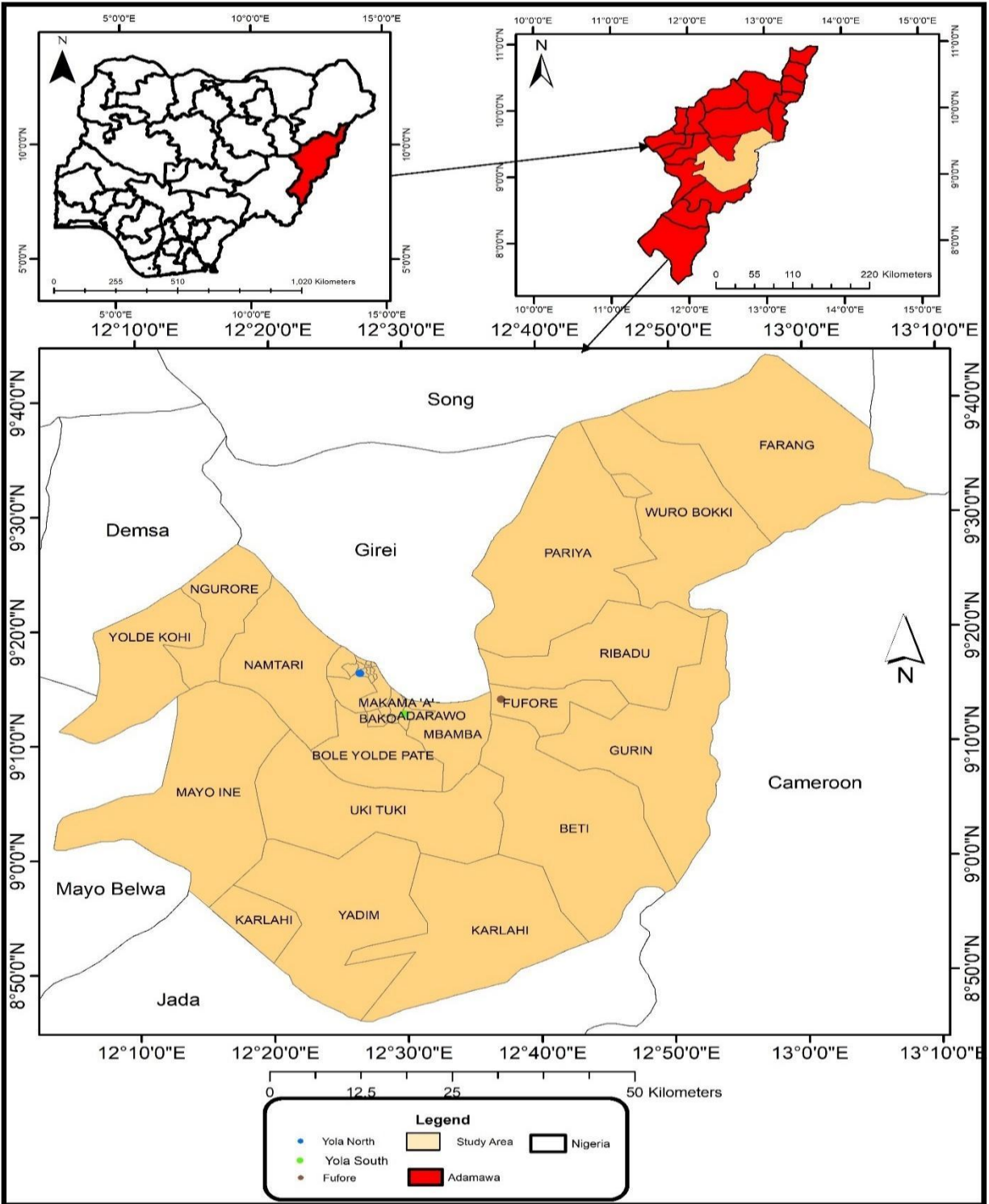
Ethnobotanical studies have been conducted worldwide focusing on a particular geographical area (Joshi *et al.* 2020). Though, several researches have been conducted on the abundant of medicinal plants and wild edible fruits globally, there is paucity of documented information on medicinal plants and wild edible fruits in the present study

areas. This study identified the various medicinal plants and wild edible fruits sold in Yola North, Yola South and Fufore Markets, Adamawa State including the medicinal plant parts used.

## **MATERIALS AND METHODS**

### **Study Area**

The study was conducted at Yola North, Yola South and Fufore Markets, Adamawa State. Yola North also known as “Jimeta”, a city located at the bank of River Benue, between latitude  $9^{\circ} 10'$  to  $9^{\circ} 15'N$  and longitude  $120^{\circ} 11'$  to  $120^{\circ} 17'E$ . The area has a Sudan type of vegetation and a tropical climate marked by wet and dry seasons (Salihu *et al.* 2020), having minimum temperature of about  $15^{\circ} C$  and a maximum of about  $40^{\circ} C$ . Yola South lies between Latitude  $9^{\circ}14'$  North of the equator and Longitude  $12^{\circ}28'$  East of the Greenwich Meridian, having an average elevation of about 192 m. The area falls within the Northern Guinea Savannah Zone and has a tropical wet and dry season. Dry season lasts for a minimum of five months, November - March, while the wet season spans from April – October with Mean annual rainfall of about 700 m. The area has a land mass of  $2,310.05/km^2$  (Girei *et al.* 2016). Fufore is one of the large, predominantly rural, ethnically diverse and physically dissected area “having substantial land mass on both sides of rivers Benue and Ine” (Tukur and Dasin2013). It is an area with many settlements of different historical origin, occupational practices and like most other parts of the country, witnessing steady increase in population, rapid expansion of farmlands, intensification of grazing, increase in fishing activities and heavy deforestation. These activities are being carried out by various ethnic groups with varying intensity and management practices (Tukur and Dasin, 2013).



**Figure 1:** Map of the Study Area

**Source:** Quantum geographic information system (QGIS) version 3.44

### **Sample Collection**

Medicinal plants and wild edible fruits were purchased, placed in a clean polyethene bag and was brought to the Department of Plant Science, Modibbo Adama University, Yola. The collection of medicinal plants and wild edible fruits specimens was made to enable detailed examination and verification of species, as well as facilitate further scientific analysis. Representative samples of the medicinal plants and wild edible fruits were selected based on their availability and relevance to the study objectives. Priority was given to plant species that were frequently mentioned by vendors i.e. species with high and low frequencies.

### **Data Collection**

A permit was obtained from the Association of Traditional Medicine, Adamawa State chapter for easy accessing of important information from the traditional folks.

The target population comprised all vendors in Yola North, Yola South and Fufore Markets who sell medicinal plants and wild edible fruits. The sample frame was a comprehensive list of these vendors, categorized into those selling medicinal plants and wild edible fruits. To ensure the sample accurately represent the diverse sections of the markets, a stratified random sampling method was used. The market was sectioned into different strata based on the type of products sold: medicinal plants and wild edible fruits. Within each stratum, vendors were selected randomly to ensure that the sample reflects the overall population to avoid bias.

Primary data for this study which included list of medicinal plants and wild edible fruits were collected, using a combination of structured interviews, questionnaires, observation, and specimen collection focusing on major variables like parts used, mode of consumption of WEFs, threats, form/habit, and seasonal availability of WEFs.

### **Semi Structured Interviews and Questionnaires**

Semi-structured interviews and questionnaires were used to obtain detailed information about the medicinal plants and wild edible fruits, including local names, parts used, threats and mode of consumption and seasonal availability of WEFs. Three hundred and eighty-four (384) questionnaires were issued to the vendors and three hundred and eighty questionnaires was retrieved.

### **Observation and Documentation**

Direct observations and photographs were taken to document the medicinal plants and wild edible fruits. Observation and documentation complemented the data collected through interviews and questionnaires by providing visual and contextual evidence of the plants and fruits sold in the markets. Observations were focused on identifying the different species available, their physical characteristics, and the ways in which they were displayed and sold.

### **Data Analysis**

Data obtained from the questionnaire was analyzed using descriptive statistics and the results were presented in tables and charts.

Relative Frequency of Citation (RFC) =FC/N. (Uzun and Koca 2020)

Where:

FC= frequency of citation (the number of informants mentioning the species)

N= total number of informants in the study (N).

### **Identification of the Different Medicinal Plants and Wild Edible Fruits Sold in Yola North, Yola South and Fufore Markets**

The Hausa names of medicinal plants and wild edible fruits, mode of consumption and seasonal availability were collected from the vendors using questionnaire, observation and photograph. They were taken to Department of Plant Science, Modibbo Adama University, Yola for proper identification. A text book “Medicinal Plants of Nigeria, North-East” was also used for identifying medicinal plants mentioned by the vendors. The data was organized in a tabular format listing each plant along with the frequency of mentions. Charts and tables were used to represent the distribution and popularity of different medicinal plants and wild edible fruits, as well as the parts used.

### **Identification of the Various Parts of Medicinal Plants Used**

Each medicinal plant that was identified by the respondents were categorized based on the parts used and forms. Categories include: leaves, roots, bark, fruits and whole plant. This provided more information on the various uses of each plant: plants that had all their parts used and plants that had only a specific part used, and the knowledge transfer of medicinal plants.

## **RESULTS AND DISCUSSION**

### **Identification of the Various Medicinal Plants Sold in Yola North, Yola South and Fufore Markets**

A total of seventy-three 73 medicinal plant species were recorded from the three markets surveyed Yola South, Yola North, and Fufore and was distributed across 33 plant families as shown in Table 1 bellow. The family Fabaceae (10) was the most represented, followed by Combretaceae, Lamiaceae, Malvaceae and Caesalpinaceae (with 4 species each). The predominance of families like Fabaceae and Combretaceae is consistent with findings in other Nigerian markets (Ibrahim, 2023), where species from these families are known for their versatility in treating multiple ailments and being easily accessible in semi-arid and savannah ecosystems. The study is in line with the study of Abdulrahman *et al.* (2023), which recorded Fabaceae 21.57%, having the highest number of species. The most frequently cited medicinal plant is *Boswellia dalzielii*, with 31 citations and a relative frequency of 0.48 and the least cited plants were *Terminallia macroptera* and *Nelsonia canescenc*, each with 5 citations and RFC: 0.08. This is an indication that *Boswellia dalzielii* is highly utilized across the study areas as a result of it therapeutic effect.

The study revealed a total of 65 participants having majority of the respondents (53.84%) from within the age range of 41 years and above, this age group tends to have accumulated experiential knowledge and are often viewed as custodians of indigenous wisdom. The age category of 31–40 years was represented by 33.85%, making it the

second most respondents, while only 12.31% were within 20–30 years' category. The data also revealed a significant gender imbalance. Out of the 65 respondents, 64 were male (98.46%), while only one 1 was female (1.54%). This is an indication that men are more familiar with medicinal plants knowledge and use in the study areas. The present study aligns with Nguyen *et al.* (2019) which reported that the majority of the respondents were within the age of 41-50. The predominance of male vendors aligns with gender roles in ethnobotanical trade, where male often manage the sale of medicinal plants, contributing to household economies. This study does not agree with the findings of Mawunu *et al.* (2022) and Nguyen *et al.* (2019), Wo reported that female was the majority in the study carried out.

**Table 1: Medicinal Plants Sold in Yola North, Yola South and Fufore Markets, Adamawa State, Nigeria**

Scientific name	Family	Common name	Hausa name	FC	RFC
<i>Guiera senegalensis</i>	Combretaceae	Wild coffee	Sabara	23	0.35
<i>Pistia steratiotes</i>	Araceae	Water flower	Kainuwa	10	0.15
<i>Ficus sycomorus</i>	Moraceae	Syccamore fig	Buare	25	0.38
<i>Boswellia dalzielii</i>	Burseraceae	Frankincense	Ararrabi	31	0.48
<i>Nauclea latifolia</i>	Rubiaceae	African peach	Tafashiya	12	0.18
<i>Senna singueana</i>	Fabaceae	Winter cassia	Rumfu	15	0.23
<i>Momordica charanthia</i> (Lim)	Cucurbitaceae	African cucumba	Garafunu	17	0.26
<i>Leptadenia hastate</i>	Asclepiadaceae		Yadiya	19	0.29
<i>Waltheria amiricana</i>	Sterculiaceae	Sleepy morning	Hankufa	22	0.34
<i>Eucalyptus globulus</i>	Myrtaceae	Eucalyptus	Zaiti	17	0.26
<i>Ficus platy-phylla</i>	Moraceae	Gutter percha tree	Gamji	26	0.40
<i>Prosopis Africana</i>	Fabaceae	Iron wood tree	Kiryia	26	0.40
<i>Euphorbia hirta</i>	Euphorbiaceae		Nonon kurchiya	14	0.22
<i>Anogeissus leicarpus</i>	Combretaceae	African birch	Marke	22	0.34
<i>Pilotigma thonningi</i>	Fabaceae		Kalgo	28	0.43
<i>Malvaviscus aboreus</i>	Malvaceae	Wax mallow	Kafi-malam	16	0.25
<i>Acacia nolitica</i>	Mimosaceae		Gabaruwa	23	0.35
<i>Lannea acida</i> (A)	Anacardiaceae	Plum mango	Faru	18	0.28
<i>Securida longepedunculata</i>	Polygalaceae	Violet tree	Sanya	21	0.32
<i>Parkia clappertonia</i>	Fabaceae	Locust bean tree	Dorowa	16	0.25
<i>Striga hermonthica</i>	Fabaceae	Striga weed	Wuta-wuta	17	0.26
<i>Mitracarpus hirtus</i> (L)	Rubiaceae		Gogamasi	28	0.43
<i>Pteracarpus erinaceus</i>	Fabaceae	African teak	Madobiya	27	0.42
<i>Detarium</i>	Fabaceae	Sweet detar	Taura	15	0.23

<i>microcarpum</i>					
<i>Khaya senegalensis</i>	Maliaceae	Mahogany tree	Madaci	18	0.28
<i>Vitex doniana</i>	Lamiaceae	Black plum	Dinya	15	0.23
<i>Terminallia macroptera</i>	Combretaceae		Baushe	5	0.08
<i>Vitellaria paradoxa</i>	Sapotaceae	Shear butter tree	Kadanya	14	0.22
<i>Ziziphus spina christi</i>	Rhamnaceae		Kurna	19	0.29
<i>Occimum gratissimum</i>	Lamiaceae	Scent leave wild	Doddoya	7	0.11
<i>Tamarindus indica</i>	Fabaceae	Tamarind	Tsamiya	13	0.20
<i>Adansonia digitate</i>	Malvaceae	Baoboa	Kuka	14	0.21
<i>Anacardium occidentale</i>	Anacardiaceae	Cashew	Kashu	13	0.21
<i>Vernonia perrottetii</i>	Asteraceae		Burzu	15	0.23
<b>Table 1 continued</b>					
<i>Psidium guajava</i>	Myrtaceae	Guava	Gwaba	12	0.18
<i>Mangifera indica</i>	Anacardiaceae	Mango	Mangoro	15	0.23
<i>Carica papaya</i>	Caricaceae	Pawpaw	Gwanda	15	0.23
<i>Gardenia erubescence</i>	Rubiaceae		Gaude	12	0.18
<i>Calotropis procera</i>	Asclepiadaceae	Sodum apple	Tumfafiya	14	0.21
<i>Allium sativum</i>	Liliaceae	Garlic	Galic	18	0.28
<i>Achyranthes aspera</i> (Linn)	Amaranthaceae		Hakkori maciji	15	0.23
<i>Amaranthus viridis</i> (Linn)	Amaranthaceae		Zaaki banza	13	0.21
<i>Jatropha carcass</i> (Linn)	Euphobiaceae	Physic nut	Kwalkwalji	11	0.17
<i>Zingiber officinale</i>	Zingiberaceae	Ginger	Citta	19	0.29
<i>Aframomum meleguata</i>	Zinberaceae	Alligato pepper	Citta	18	0.28
<i>Monechma ciliatum</i>	Acanthaceae	Lizard tail	Wutsiyar kadan gare	11	0.17
<i>Xylopiya athiopica</i>	Anonaceae	African pepper	Kimba	15	0.23
<i>Nelsonia canescenc</i>	Acanthaceae	Blue pussy leaf	Dambun makiyaaya	16	0.25
<i>Afrormosia laxiflora</i>	Euphorbiaceae	Afrormosia	Makarho	12	0.18
<i>Indigofera emarginella</i>	Fabaceae	Black indigo	Baba	10	0.15
<i>Cucuma longa</i>	Zingiberaceae	Tumeric	Gangamo	15	0.23
<i>Streospermum kunthianum</i>	Bignoniaceae	Pink jacaranda	Sansami	21	0.32
<i>Ziziphus mauritiana</i>	Rhamnaceae		Magarya	20	0.31
<i>Piper nigrum</i>	Piperaceae	Black pepper	Masoro	13	0.21
<i>Mentha piperita</i>	Lamiaceae	Peppermint	Na'ana	13	0.21

<i>Ximenia Americana</i>	Olacaceae	Hog plum	Tsada	17	0.26
<i>Sterculia setigera</i>	Malvaceae		Kukkoki	6	0.09
<i>Hibiscus sabdariffa</i>	Malvaceae		Zobo	10	0.15
<i>Garcinia kola</i>	Guttiferae	Bitter kola	Mijin goro	9	0.14
<i>Hygrophilla auriculata</i>	Acanthaceae	Talmakhana	Zazargiwa	13	0.21
<i>Hyptis suaveolens</i>	Lamiaceae	Bush menth	Daddoya- ta- daji	15	0.23
<i>Combretum molle</i>	Combretaceae		Farin ganye	5	0.08
<i>Daniella oliveri</i>	Caesalpinaceae	African copaiba	Maje	14	0.22
<i>Cassia sieberiana</i>	Caesalpinaceae	African laburnum	Marga	13	0.21
<i>Cassia siamia</i>	Caesalpinaceae	Pheasant wood	Flowa turawa	10	0.15
<i>Cassia occidentalis</i>	Caesalpinaceae	Stinking wood	Rai daure	14	0.22
<i>Commiphora Africana</i>	Burseraceae	African myrrh	Dashi	12	0.18
<i>Kigelia Africana</i>	Bignoniaceae	Sausage tree	Nonon giwa	7	0.11
<i>Aspilia Africana</i>	Asteraceae		Matsarmaman wanzamia	7	0.11
<i>Carissa edulis</i>	Apocynaceae	Caradus plum	Cizaa	13	0.21
<i>Burkea Africana</i>	Fabaceae	Wild syringe	Rumpo	12	0.18
<i>Balanite aegyptiaca</i>	Zigophyllaceae	Desert date	Aduwa	13	0.21
<i>Acacia seyal</i>	Mimosaceae		Jan kaya	8	0.12

**Table 2: Demographic information of the Respondents dealing in medicinal plants across Yola North, Yola South and Fufore**

Age	Frequency	Percentage
20-30	8	12.31
31-40	22	33.85
41 years and above	35	53.84
Gender		
Male	64	98.46
Female	1	1.54

### Identification of the Wild Edible Fruits Sold in Yola South, Yola North and Fufore Markets

The study recorded a total of 19 wild edible fruit (WEFs) species belonging to 11 plant families with Fabaceae (5) being the most represented followed by Sapotaceae,

Aracaceae, Rhamnaceae, Anacardiaceae represented by 2 species each, the remaining six families were represented by a single species (Table 3).

The diversity of WEFs in the study areas is similar to that found in a study conducted by Yiblet and Yiblet (2023) which listed 36 wild edible plants (WEP) species with the highest numbers of WEP reported in the families of Moraceae and Anacardiaceae followed by Lamiaceae and Polygonaceae. Direct consumption as fresh fruits (i.e., raw) was the most prevalent mode (73.68%), (21.05%) reported combining mode of consumption “both cooked and raw”. Only one (5.26%) wild edible fruit (*Irvingia gobonensis*) was reported to be eaten only when it is cooked. The dominance of the raw consumption of the wild edible fruits aligns with Maroyi’s (2017) findings that fresh consumption is favoured in sub-Saharan Africa for its simplicity and retention of nutritional benefits, such as high vitamin C. Similarly, Yiblet and Adamu (2023) reported that raw consumption was the most consumption among the respondents.

The data revealed distinct seasonal patterns, with 5 (26.32%) species available year round. 8 (42.10%) species were reported as the species mostly available during dry season, meanwhile only 6 (31.58%) species were reported to be available during the rainy season as showed in table 3. The diverse seasonal patterns reflect the ecological constraints of fruiting cycles in Northern Nigeria, however, a study by Yiblet and Adamu (2023) revealed that wild edible fruits were available throughout the spring and fall seasons in Tach Gayint District, South Gondar Zone, Amhara Region, Northwestern Ethiopia. The Relative Frequency of Citation (RFC) values range from 0.48 in *Ziziphus mauritiana* to 0.04 in *Borassus aethiopicum*, across the three regions.

Middle-aged “31-40 years” individuals dominated ethnobotanical markets in the study areas due to their balance of physical capability and experiential knowledge (Table 4). This finding is slightly similar to that of Yiblet and Adamu (2023) who noted that the predominant respondents were within the age bracket of 16-39. The dominance of female in these three markets does not corroborate with Yiblet and Adamu (2023) who reported that majority of the informants interviewed were male.

**Table 3: Wild Edible Fruits, Forms/Habit, Mode of Consumption and Seasonal Availability**

Scientific name	Family	Hausa name	Form / Habit	Mode of Consumption	Seasonal Availability	FC	RFC
<i>Tamarindus indica</i>	Fabaceae	Tsamiya	Tree	Cooked/Raw	All year round	50	0.16
<i>Parkia biglobosa</i>	Fabaceae	Dorowa	Tree	Raw	March-May	26	0.08
<i>Detarium microcarpum</i>	Fabaceae	Taura	Tree	Raw	Jan-March	39	0.12
<i>Dialium</i>	Fabaceae	Tsamiya	Tree	Raw	May-	29	0.09

<i>genensis</i> <i>Tetrapleura</i> <i>tetraptera</i>	Fabaceae	n biri	Tree	Cooked/Raw	July All year round	61	0.19
<i>Vitex</i> <i>doniana</i>	Lamiaceae	Dinya	Tree	Raw	June- Septem- ber	40	0.13
<i>Vitllaria</i> <i>paradoxa</i>	Sapotaceae	Kadanya	Tree	Raw	June- Septem- ber	46	0.15
<i>Chrysophyllum</i> <i>albidum</i>	Sapotaceae	Agbaluma	Shrub	Raw	Decemb- er- March	54	0.17
<i>Adansonia</i> <i>digitate</i>	Malvaceae	Kuka	Tree	Raw	Jan- March	26	0.08
<i>Borassus</i> <i>aethiopum</i>	Aracaceae	Giginya	Tree	Raw	May- July	14	0.04
<i>Hyphaene</i> <i>thebiaca</i>	Aracaceae	Goroba	Tree	Cooked/Raw	All year round	142	0.45
<i>Ziziphus</i> <i>mauritiana</i>	Rhamnaceae	Magarya	Tree	Raw	Jan- May	151	0.48
<i>Ziziphus</i> <i>spina Christi</i>	Rhamnaceae	Kurna	Tree	Raw	April- July	76	0.24
<i>Diospyros</i> <i>mespiliformis</i>	Ebenaceae	Kanya	Tree	Raw	Decemb- er- March	17	0.05
<i>Balanites</i> <i>egyptiaca</i>	Zigophyllaceae	Adua	Tree	Raw	April- July	38	0.12
<i>Monodora</i> <i>myristica</i>	Anonaceae	Gidamiya	Tree	Cooked/Raw	All year round	31	0.09
<i>Irvingia</i> <i>gobonensis</i>	Irvingiaceae	Ogbono	Tree	Cooked	All year round	32	0.10
<i>Haematostaphis</i> <i>barteri</i>	Anacardiaceae	Jininkafuri	Tree	Raw	July- August	57	0.18
<i>Spondias</i> <i>purpurea</i>	Anacardiaceae	Chabulle	Tree	Raw	April- July	35	0.11

**Source:** Yola North, Yola South and Fufore Markets, Adamawa State

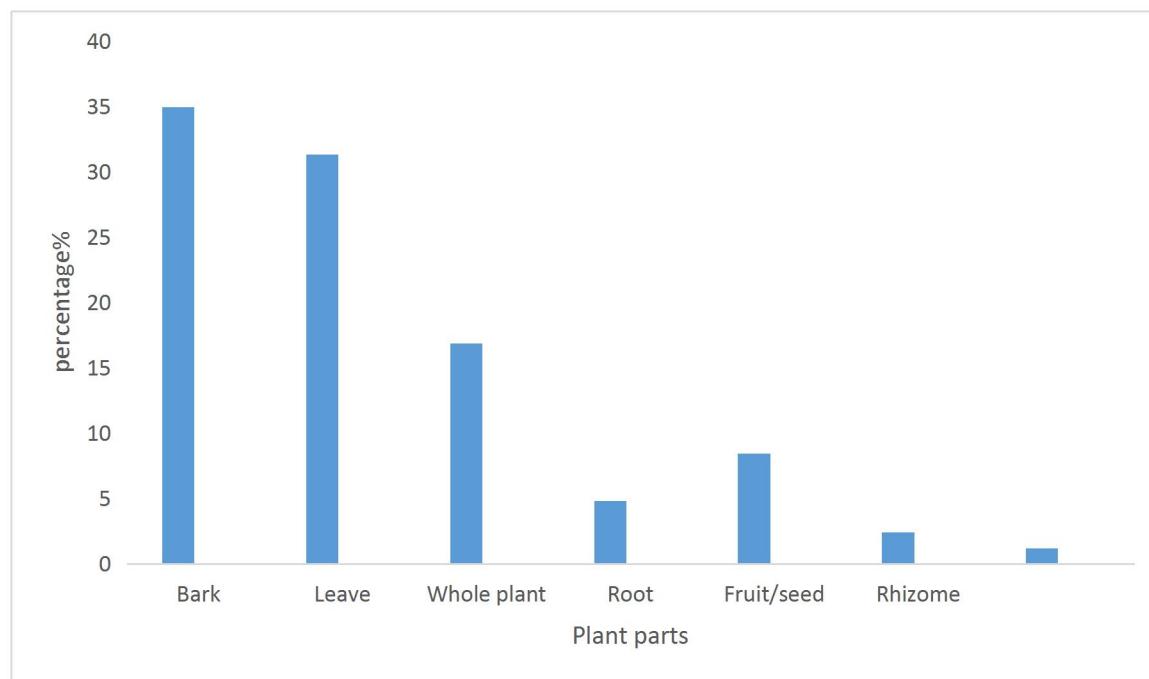
**Table 4: Demographic Information on Wild Edible Fruits**

	Frequency	Percentage
Gender		
Male	128	40.63
Female	187	59.37
Age		
20-30	102	32.38
31-40	157	49.84

### Medicinal Plant Parts Used in the Preparation

The plant parts recorded include bark, leaves, roots, fruits/seeds, bulbs, pods, rhizomes, and whole plants. Among the plant parts used, bark was the most frequently cited, accounting for 34.94% species. Leaves were the second most commonly used plant part, represented in 31.33% species. Whole plants were used in 16.87% species. Other plant parts recorded include roots 4.82% species, fruits or seeds 8.43% species, rhizomes 2.41% species and bulbs 1.20%.

The present study corroborates the study conducted by Alade *et al.* (2021), in which bark usage was reported to be dominant in herbal preparations. While leaf harvesting is generally considered more sustainable than bark removal, the overuse of bark in local markets raises ecological concerns, particularly regarding tree survival and forest sustainability (Ismail & Okafor, 2020).



**Figure 2:** Medicinal Plant Parts Used in the Preparation

### CONCLUSION

The study identified 73 medicinal plant species and 19 wild edible fruit species distributed across the study areas, with *Fabaceae* families being the most represented. Bark and leaves were the primary medicinal plant parts used, while fruits were mostly consumed fresh, with the trade dominated by experienced male vendors for medicinal plants and females for fruits. *Boswellia dalzielii* and *Ziziphus mauritiana* were the most cited species.

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