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# AN INVENTORY OF SOME WILD EDIBLE PLANTS (WEPs) IN KATSINA STATE, NIGERIA.

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## ABSTRACT

An ethnobotanical Survey of wild edible plants in some selected Local Governments Area of katsina State namely: Katsina, Funtua and Kusadawas conducted. The objective was to identify and document wild edible plants and the knowledge associated with these plants in the study area. Ethnobotanical informations on wild edible plants were collected .Guided semi-strucruwred questionnaire was used. Consensus method and group discussion was used to verify informations obtained from the respondesnts. Descriptive statistics was used to analyzed the data. In the present. In the present study, 44 wild edible plants species spread across 26 families 35 genera based in local claims as food were documented. The family Fabaceae is the most cited family represented by 6 species (13.33%), followed by Moraceae represented by 5 species (11.11%), and then Malvaceae and Arecaceae represented by 3 species each (6.66%), Anacardiaceae, Apocynaceae, Capparaceae, and Euphorbia each represented by two species (2.22%) and then Asteraceae, Araceae, Annonaceae, Buseraceae, Cleomaceae, Chrysobanaceae, Capparaceae, Discreaceae, Ebenaceae, Lamiaceae, Loganiaceae, Myrrtaceae, Nymphae eae, Olaceae, Poaceae, portulacaceae, Sapotaceae Vitaceae and Zygophyllaceae are each represented by 1 species (2.22%). The study showed the existence of wild edible plants in the study area which alleviate food security during famine time occasionally faced in the study area. The respondesnts stated that wild edible plants are under threat due to altered climate and greater human pressure. This necessitates quick and collaborative measures to maintain the equilibrium between the natural abundance of edible plants in the wild and their by the local community. It was concluded that the study highlights the importance of these plants in ensuring food security, nutrition, and livelihoods for the people of Katsina. The documentation of traditional knowledge and uses of these plants can contribute to their conservation and sustainable utilization. It was also recommended that Conservation measures should be implemented to protect and sustainably manage wild edible plant populations, Local communities should be encouraged to adopt sustainable harvesting practices to ensure the long-term availability of these plant resources, Further research should be conducted to analyze the nutritional value of these wild edible plants.

**Keywords**: Wild edible plants, Katsina, Nigeria, traditional knowledge, food security, sustainable utilization.

## INTRODUCTION

In semiarid areas of West Africa, rural communities make use of a wide range of wild plants to supplement their food which is based on the rainfed production of staples such as millet, sorghum, groundnut and cowpea. Tree, shrub, and herbaceous plant parts can be used to make soups or stews that are served with starchy foods (Harris and Mohammed, 2003) In addition to adding diversity, intrigue, and flavour to the diet, wild foods also supply vitamins and minerals that are critical for healthy growth and maintenance of the body (Mohammed, 2003).

Despite the abundance of plant species in our globe, only a limited number have been utilised as food by humans (Blanco-Salas *et al*., 2019). This suggests that many plant species globally have not been adequately domesticated and researched on. Wild edible plants are plants that are neither domesticated nor cultivated but yet has at least one edible part which could either be leaf, root, fruit or seed (Shaheen *et al*., 2017)

The consumption of wild edibles is integral to the dietary practices of numerous communities and is closely linked to various aspects of their socio-cultural, spiritual, and health-related lives (Singh, 2006). It significantly contributes to fulfilling the dietary needs of the indigenous population in distant regions of the country year-round (Hazarika *et al.,* 2012; Britta *et al*., 2021).

The number of wild species in Nigeria has drastically decreased as a result of deforestation. This sharp decline has also resulted in a notable decline in local awareness about WEPs (Bhogaonkar, 2006). There is currently a dearth of reliable databases of Wild edible plants species in the study area.This study aimed at documenting WEPs in the study area. Given the foregoing, it is now more practical to document, preserve, and transmit WEP information from one generation to the next.

## MATERIALS AND METHOD

### Study Area

The study was carried out in Katsina State Northwestern Nigeria (12º 59‟N, 7º 36‟E); with a total area of 142km2 a city (formerly a city-state), and a Local Government Area in northern Nigeria, and is the capital of present day Katsina State. It is located some 256,50 km east of the city of Sokoto, 135,18 km northwest of Kano, close to the border with Niger. As of 2022, it has been projected that Katsina state estimated population is 11,565,586 (NPC, 2022). The city is the centre of an agricultural region producing groundnuts, cotton, hides, millet and guinea corn, and also has mills for producing

peanut oil and steel ( Samaila and Abd El-Ghani, 2015). The population is mainly from the Fulani and Hausa ethnic groups. A combination of purposive and random sampling methods was adopted. Three Local Governments Areas namely: Katsina, Funtua and Kusada were purposively selected base on assibility. Within each Local Governments, two villages and towns were purposefully chosen namely: Katsina and Kadifawa representing Katsina, Kusada and Kafarda representing Kusada LGA Unguwan Shanui representing FuntuaLGA.

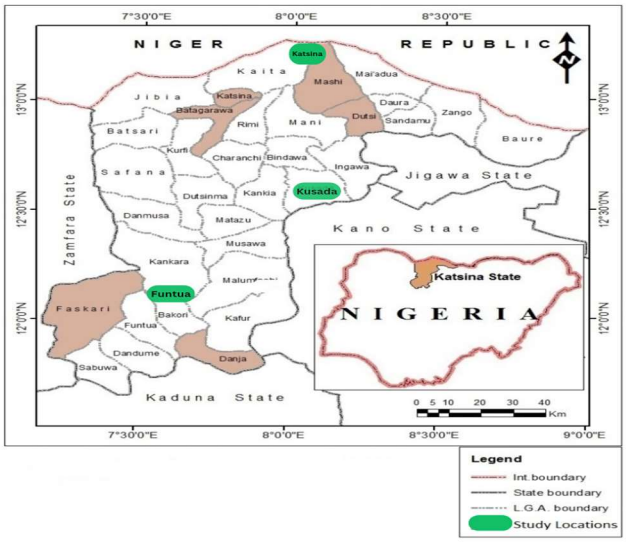


Figure1: Map of Katsina State showing the selected areas for the study
**Source**: Cartography Unit, Department of Geography, Umaru Musa Yar'adua University, Katsina (2025).

**Ethnobotanical Survey**

The ethnobotanical survey was conducted using themethodology described by Ajibesin *et al*. (2008) and (Sulaiman *et al.,* 2015)was adopted. This study was conducted from January 2025 to March, 2025. Semi-structured questionnaire was used to obtained ethnobotanical data. For convenience purpose the participants chosen for this study were elderly people, Farmers, Tradional medicine vendors, Traditional birth attendant and anyone available and have the knowledge of Wild Edible plants and how they are used traditionally. Formal introduction Formal introduction was made to the traditional rulers of the various Local Government Areas visited. After revealing the identity of the researcher, aim of the research was also disclosed to the traditional rulers and the prospective respondents in accordance with the International Society of Ethnobiology codes of ethics (http:/ethnobiology.net/code-of-ethics/). Brief discussion session was organized with few prospective respondents who later on helped in educating subsequent respondents on the aim of the research and how it was conducted. During the discussion, they were informed of the urgent need to document Wild edible plants with their medicinal uses, the parts used and the method of preparations as such knowledge is fast diminishing since it is transmitted orally from generation to generation. The questionnaire is divided into two parts, namely parts A and B. In part A, the socio-demographic information of the respondents was recoded. Information on Wild edible was recorded in part B. One fify (150) respondents were selected from each LGA. The interview was conducted in the native language of the study area (Hausa language). Plant species collected were identified by their local names (Agishi, 2010), standard texts (Arbonnier, 2004, Keay, 1989) and with the aid of virtual herbaria. Herbarium specimen for each of the plants collected were prepared and kept in the herbarium, Department of Plant Science and Biotechnology Federal University Dutsima Katsina State, Nigeria for future reference and study.

**RESULTS AND DISCUSSION**

**Sociodemographic Information of the Respondents**

Table 1 shows the Sociodemographic Information of the Respondents. A total of 450 participants including traditional medicine practitioners, civil servants and others were included in the study (Table 1). Based on gender, 77.7% of the respondents were males while 22.3% were females. Going by the age of the interviewees, majority of them are 61-75 years of age (44.4%). Other age range that followed are 46-60

(22.22%), 31-45 (21. 7%), 15-30 (8.88%) and >75(2.66%). The table also revealed the education qualification of the respondents where 66.66% had non-formal education, 17.77% attended primary school education, 4.44% attended secondary school education while 11.11% attended tertiary education qualification. Most of the respondents had no formal education (52.8%). The table also revealed occupation of the respondents with Farmers making the highest percentage (78.22%) then , Civil servants (23.33%), Traditional Medicine vendors (5.55%), and Traditional birth attendance (14.44%) (Table 1).

**Table** 1**:** Socio-demographic information of the respondents

| **Biodata** | **Frequency** | **Percentage** |
|---|---|---|
| **Sex** | | |
| Male | 350 | 77.7 |
| Female | 100 | 22.3 |
| | 180 | 100 |
| **Age (Years)** | | |
| 15-30 | 40 | 8.88 |
| 31-45 | 98 | 21.7 |
| 46-60 | 100 | 22.22 |
| 61-75 | 200 | 44.44 |
| >75 | 12 | 2.66 |
| | 450 | 100 |
| **Level of Education** | | |
| Non formal | 300 | 66.66 |
| Primary | 80 | 17.77 |
| Secondary | 20 | 4.44 |
| Tertiar | 50 | 11.11 |
| | 450 | |
| **Occupation** | | |
| Civil Servant | 105 | 23. 33 |
| Traditional Medicine Vendor | 42 | 5.55 |
| Farmer | 352 | 78.22 |
| Traditional Birth Attendant | 56 | 12.44 |
| **Total** | 450 | 100 |

**Distribution of families of Wild Edible Plants in Katsina**

Table 2 shows the list of different wild edible plants in as Identified and documented in this study.The common names, local names, family names, scientific names, part used, habits are also included. The family Fabaceae is the most cited represented by 6 species (13.33%), followed by Moraceae represented by 5 species (11.11%), and then Malvaceae and Arecaceae represented by 3 species each (6.66%), Anacardiaceae, Apocynaceae, Capparaceae, and Euphorbia each represented by two species (2.22%) and then Asteraceae, Araceae, Annonaceae, Buseraceae, Cleomaceae, Chrysobanaceae, Capparaceae, Discreaceae, Ebenaceae, Lamiaceae, Loganiaceae, Myrrtaceae, Nymphae eae, Olaceae, Poaceae, portulacaceae, Sapotaceae Vitaceae and Zygophyllaceae are each represented by 1 species (2.22%) (figure 1).

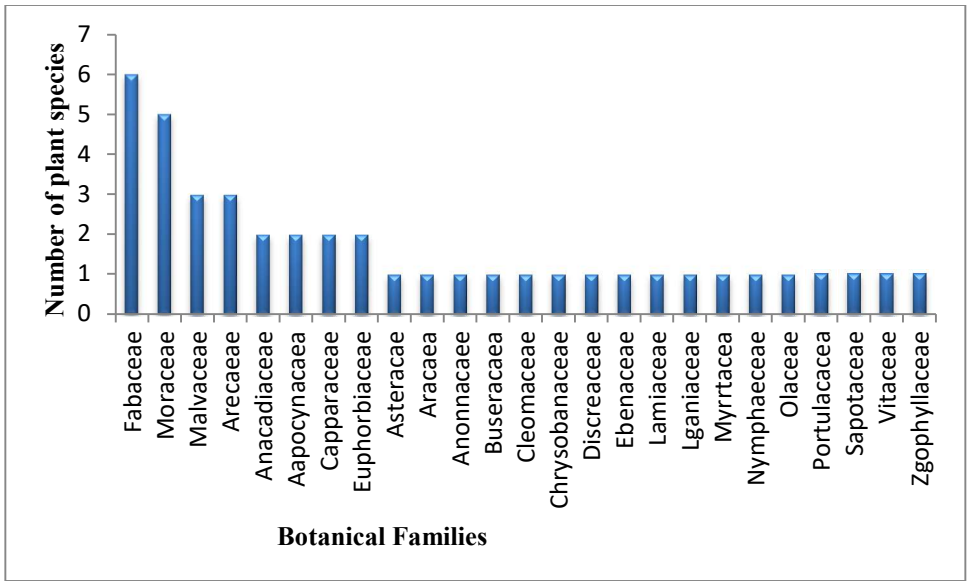


**Figure 2: Families of some wild edible plants in Katsina State**

**Parts of the Wild edible plants eaten in Katsina State**

Different parts of Wild edible plants are reported to be used in the study area including, leaves (44.44%), fruits (33.33%), Fruits and Leaves (6.66%), (3%) Fruitsand seeds (8.88%), Seeds (2.22%), Roots (2.22%) and Tuber (2.22%). (figure 2).

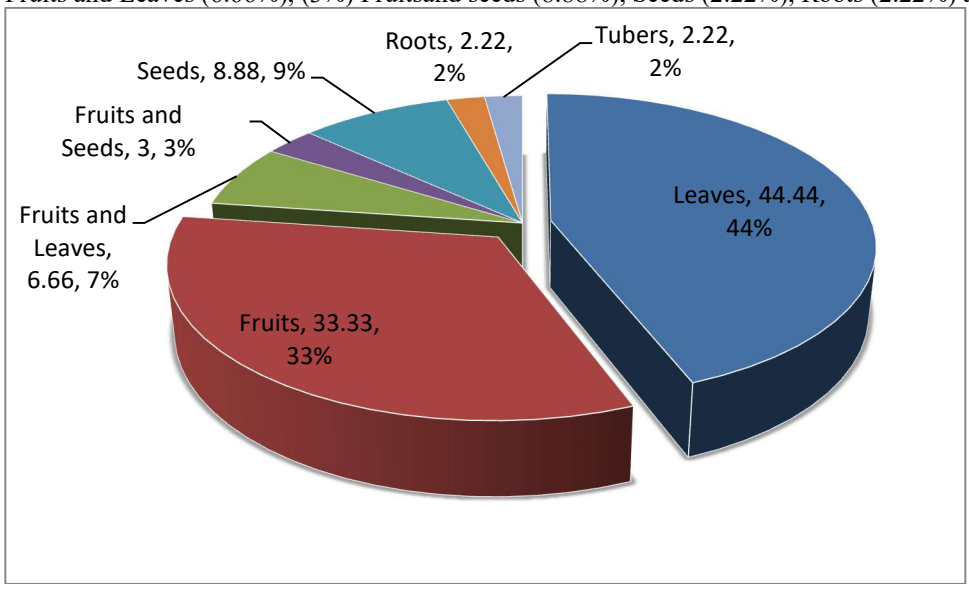


Figure 2: Parts of some wild edible plants eaten in Katsina State

**Habits of Wild edible plants in plants in Katsina State**

The various habits of the wild edible plants in Katsina State as documented in the present study are; Trees 27 (60%), shrubs 7 (15.55%), herbs 11 (24.44%), and vines 2 (figure 3).

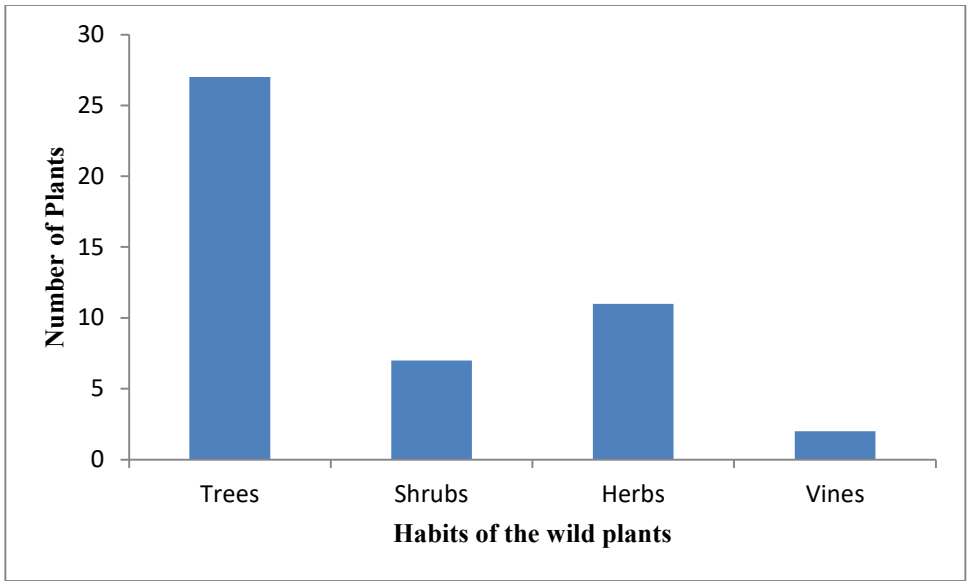


Figure:3 Habits of some wild edible plants in Katsina State

**Wild edible plants in Katsina State**

A total of 44 plants species spread across 26 families were identified and documented as wild edible plants utilized by the local people of Katsina State. The plants were eaten as vegetables/soup and fruits and seeds (Table 2).

**Table** 2**:** Some wild edible Plants species in Katsina State

| Family Name | Scientific Name | Local Bame | Common Name | Edible Parts | Habits |
|---|---|---|---|---|---|
| Cleomaceae | *Cleome gynandra* | Gasaya | African Cabbage | Leasves | H |
| Apocynaceae | *Leptadenia hastata* | Yadiya | Anvara | Leaves | V |
| Malvaceae | *Adansonia digitaa* | Kuka | Baoba | Leaves and Fruits | T |
| Ebenaceae | *Diospyrous mespiliformis* | Kanya | Jackalberry | Fruits | T |
| Rhamnaceae | *Zizupus spinachristi* | Kur na | Christ thorn jujube | Fruits | T |
| Chrysobalanaceae | *Neocarya macrophylla* | Gawasa | Ginger bread plum | Fruits | T |
| zygophyllaceae | *Balanite aegyptiaca* | Aduwa | Desert Data | Leaves and Fruits | T |
| Fabaceae | *Bauhinia thonningii* | Kalgo | Camel's foot tree | Leaves | T |
| Anacardiaceae | *Lannea acida* | Faru | Plum mango | Leaves and Fruits | T |
| Olacaeae | *Ximenia americana* | Tsada | Yellow plum | Fruit | S |
| Diascoreaceae | *Diascorea bulbifera* | Tuwon biri | Bitter Yam | Fruit | H |
| Anacardiaceae | *Sclerocarya birrea* | Danya | Cider Tree | Fruit | T |
| Rhamnaceae | *Zizupus mauritiana* | Magarya | Indian plum/Chinese date | Fruit | T |
| Arecaceae | *Hyphene thebaica* | Goruba | Doum palm | Fruit/seed | T |
| Arecaceae | *Borassus aethiopum* | Giginya | African fan Palm | Fruit/Seed | T |
| Sapotaceae | *Vitellaria paradoxa* | Kadanya | Shea Butter Tree | Fruit/seed | T |
| Lamiaceae | *Vitex doniana* | Dinya | Black Plum | Fruit | T |
| Fabaceae | *Parkia biglobosa* | Dorawa | African Locus Bean | Fruit/seed | T |
| Annomaceae | *Annona Senegalensis* | Gwadar dawa | African Custard Apple/Wild soursoap | Fruit | T |
| Moraceae | *Ficus tricopoda* | Baure | Swamp Fig | Fruit | T |
| Fabaceae | *Cassia occidentalis* | Raidore | Coffee Senna | Leaves | H |
| Vitaceae | *Ampelicissus africanus* | Rogon dawa | Wild cassava | Tuber | S |
| Fabaceea | *Cassia obtusefolia* | Tafasa | Sicklepod/Coffee weed | Leaves | H |
| Moraceae | *Ficus thonningii* | Cediya | Wild Fig | Leaves | T |
| Moraceae | *Ficus platyphylla* | Gamji | Fig Tree | Leaves | T |
| Nymphaceae | *Nymphae lotus* | Bado | Water Lilly | Seeds | H |
| Moraceae | *Ficus ingens* | K'aawari | Red leaved Fig | Leaves | T |
| Malvaceae | *Chorchoeus trilocularis* | Laluwa/Lalo | Wild Jute | Leaves | H |
| Euphorbiaceae | *Euphorbia balsamifera* | Aliyara | Balsam Spurg | Leaves | S |
| Capparaceae | *Bosch is salicifolia* | Zure | willow-leaved | Leaves | T |

| | | | | | |
|---|---|---|---|---|---|
| | | | Shepherdstree | | |
| Portulacaceae | *Portulaca oleracea* | Daburin sanuwa/lallen shamuwa | Purselane | Leaves | H |
| Buseraceae | *Commiphora heldebrandtii* | Dashi | Warnecke's ground arum | Leaves | T |
| Capparaceae | *Maerua angolensis* | Ciciwa | Warnecke's ground arum | Leaves | T |
| Loganiaceae | *Strychnos spinosa* | Kokiya | Warnecke's ground arum | Fruit | T |
| Apocynaceae | *Raphionacme brownii* | Lubiya | Warnecke's ground arum | Fruit | H |
| Fabaceae | *Tamarindus indica* | Tsamiya | Warnecke's ground arum | Fruit | T |
| Fabaceae | *Detarium senegalense* | Taura | Warnecke's ground arum | Fruits | T |
| Araceae | *Stylochiton lancifolius* | Kunnen Jakki | Warnecke's ground arum | Leaves | H |
| Arecaceae | *Phoenix dactilifera* | Dabino | Date Palm | Fruit | T |
| Euphorbiaceae | *Jatropha curcas* | Cindazugu/Binidazugu | physic nut or purging nut | Leaves | S |
| poacea | *Urelytrum giganteum* | Jema | | Root | H |
| Malvaceae | *Sterculia tomentosa* | Kukkuki | African Star Chestnuts | Leaves | S |
| Asteraceae | *Taraxacum officinale* | Yankwaci/Namijin Dayii | Dandelion | Leaves | H |
| Moraceae | *Ficus valis-choude* | Lubiya | False Cape Fig | Leaves | S |
| Myrrtaceae | *Syzygium guineense* | Malmo | Waterberry | Leaves | T |

Key: T= Trees, H= Herbs, S= Shrubs, V= vines.

**DISCUSSION**

As presented in table 77.7% of the respondents were males while 22.3% were females. This may not be unconnected with the fact that males are more accessible in the study area compared to their male counterparts. This agrees with the findings of Liadi *et al*. (2016) who reported that 80% of respondents in an ethnobotanical survey of indigenous plants used in the treatment of malaria in Dutsin-Ma, Katsina State were males.The result of this findings also corroborate with that of Mukaila *et al.* (2022) who reported that in an Ethnomedicinal Evaluation of wild edible plants in Ile-Ife Osun State, majority of the respondents were males who made up 63% whereas females were 33% of the respondents. Regarding the age of the interviewees, majority of them were within the age range of 61-75 years of age (44.44%) which shows that older people of the community are the main repository of ethnomedicinal knowledge. This poses a serious danger to the ethnobotanical knowledge of the community since it not documented and is only passed orally to close relatives orally. The very unfortunate thing is that youngsters are not willing to acquire such useful ethnomedicinal knowledge. Other age range that followed are 46-60 (22.22%), 31-45 (21.7%), 15-30 (8.88%) and >75(2.66%) years. This result is similar to the findings reported by Sulaiman *et al*. (2015) who found that 33.3% of the respondents who reported the used of medicinal plants for traditional maternal health care are 61-70 years of age. Singh *et al*. (2012) also reported that youngsters of Taru and migrant society in Western Nepal were less aware of the use of medicinal plants. It was however reported that bulk of ethnomedicinal knowledge is still intact with the traditional healers who claim secrecy of the knowledge. The traditional medicine practitioners have a strong belief that if such secrecy is to be divulged to every member of the community, the medicinal potentiality of medicinal plants would be lost (Singh *et al.*, 20

The current study revealed that most of the respondents had no formal education (66.66%). This could be due to their remoteness to the learning centers and as such most of them embraced farming and other activities to earn a living Instead. This also agrees with the findings Mukaila *et al.* (2022) who reported that in an Ethnomedicinal Evaluation of wild edible plants in Ile-Ife Osun State, the highest percentage of the respondents (57%) had no formal education.The result also revealed occupation of the respondents with Farmers making the highest percentage (78.22%).

Out of the 27 Families of Wild edible plants documented, Fabaceae (figure 1) stands out as the most used represented by 6 species (13.33%). This could be that members of the family Fabaceae are within the reach of the locals who utilize them. This agrees with the findings of Dibong *et al*. (2001) who also conducted a similar research and found out that most of the plant species used by the local people the area studied are within their proximity.

Dibong *et al*. (2001) who also conducted a similar research and found out that most of the plant species used by the local people the area studied are within their proximity.

Several wild edible species occur in the research region, according to the findings. In this research, 45 wild edible plants were Identified in the study area. As a result, their occurrence in the region is a type of food security insurance.

According to Petropoulos *et al*. (2018), people are becoming more aware of plants particularly wild edible plants , which serves as diet complements as well as healthful and functional meals that combat certain diseases . The demand for these species is likely to increase as a result. The ethnopharmacological significance of the identified wild edible plants was well-known among the locals in the study area.

Fresh leaves are the most part used by the indigenous people of the study area; this may be justified by its availability and accessibility and by its high content of vitamins and other bioactive agents agents. Furthermore, harvesting leaves does not cause serious damage to the plant compared to root, and stem bark (De wet *et al*., 2013). This result corroborates with the findings of Mohammed *et al.* (2015), where they documented that leaves were the most reported plant parts used by the indigenous people of some selected areas in Kano State Nigeria.

**Conclusion**

The ethnobotanical survey of wild edible plants in Katsina State has provided valuable insights into the diversity of plant species used as food sources by local communities. The study highlights the importance of these plants in ensuring food security, nutrition, and livelihoods for the people of Katsina. The documentation of traditional knowledge and uses of these plants can contribute to their conservation and sustainable utilization.

**Recommendations**

I. Conservation Efforts: Conservation measures should be implemented to protect and sustainably manage wild edible plant populations.
II. Promotion of Sustainable Use: Local communities should be encouraged to adopt sustainable harvesting practices to ensure the long-term availability of these plant resources.
III. Nutritional Analysis: Further research should be conducted to analyze the nutritional value of these wild edible plants.
IV. Community Engagement: Community-based programs should be established to promote the importance of wild edible plants and their sustainable use.

V. Integration with Development Programs: The findings of this study should be integrated into development programs aimed at improving food security and livelihoods in Katsina State.

By implementing these recommendations, we can promote the sustainable use and conservation of wild edible plants, ultimately contributing to the well-being of local communities in Katsina

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