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Survey of aromatic and medicinal plants used by Gashua, Yobe State, Nigeria

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Abstract

Aromatic and medicinal plants provide humans with both food and medicine; they cure several ailments in humans and animals without any residual effects on life. Some of these plants are used in the biological control of insect pests, while others are used as aroma, Flavour, and/or additives in many food industries. A survey of aromatic and medicinal plants was conducted to identify aromatic and medicinal plants that are found and used as medicine and also as food in Bade L.G.A. with the aid of a structured questionnaire. The study area was randomly selected to avoid bias in the study. A total of nine villages (9) out of 13 villages were selected in order to cover more than thirty percent of the study area. A total of 250 participants were selected from the study area, which included all farmers, herbalists, and others. The results of the gender findings indicated that male participants were the majority, while married participants were the majority in the study area. However, sixty-nine different plant species that are used for treating various ailments and as food aromas, additives, or preservatives and their modes of application were identified during the course of the research. Meanwhile, the family *Fabaceae* is the dominant family with the highest frequencies. According to this survey, the majority of the commuters' interviewed heavily rely on ethno medicine for their health care. Therefore, there is a need for proper documentation and preservation of this knowledge for sustainable utilisation.

Keywords: Gashua, aromatic, medicinal, ethno botanical

Introduction

Medicinal plants are those plants that are mostly recognised and utilised as ethno medicine and conventional medicine, while aromatic plants are used for their flavour and aroma. These plants are rich in biological resources that are used for the manufacturing of drugs in modern medicine (Giannenas *et al.*, 2020) ^[12]. While numerous *in vitro* investigations have identified aromatic plants as antibacterial and antioxidant substances, their incorporation into numerous food items, including conventional meat, dairy, and baked goods, adds value to these dishes. Many essential compounds for human bodies are produced by aromatic and medicinal plants. Many plant parts are used to treat a variety of illnesses; these plants are referred to as aromatic and medicinal plants. Aromatic plants, sometimes referred to as "herbs and spices," have a wide range of uses in medicine, cosmetics, agronomy, virucidal, bactericidal, anti-parasitic, fungicidal, and insecticidal applications. (Tariq *et al.*, 2019) ^[11]. These plants are found to have more widespread use in the food manufacturing industry as alternatives to harmful food additives (Christaki *et al.*, 2012) ^[12]. Aromatic herbs, oils, and aroma chemicals are extensively used in the perfumery, flavouring, and cosmetic industries or as starting materials for the synthesis of other compounds. However, a few of them have amazing uses in the medicine and pharmaceutical industries as therapeutic agents. Medicinal plants and their extracts have been used by man since prehistoric times to cure various diseases that resulted in the discovery of some important drugs like morphine (analgesic), reserpine (antihypertensives), taxol, vinca alkaloids (anticancer), digitoxin (cardiotonic), codeine (antitussives), quinine, and artemisinin (antimalarials). The majority of the people who have knowledge of ethnobotany are old and fall between the ages of 40 and above. It is well known that any human being who reaches the age of 40 and above has reached his diminishing age. This traditional knowledge of aromatic and medicinal plants needs to be surveyed and validated in order to prevent its loss, as it is valuable to societies and the global community. Societies can preserve this priceless knowledge from being lost following the passing of elderly herbalists by conducting ethno-botanical surveys. Moreover, ethnobotany research is essential because medicinal plants represent a valuable and profitable component of biodiversity. Based on ethno-botanical assessment, numerous active natural substances have been found in medicinal plants.

Therefore, the study was designed to survey and document the medicinal and aromatic plants used by Bade LGA commuters.

Methodology

Study area

Gashua is a village in Yobe State, northeastern Nigeria, situated on the Yobe River a short distance downstream from the Hadejia and Jama'are rivers' confluence. The elevation on average is 299 metres. In 2006, the population was approximately 125,000. March through April is the hottest months, with average highs of 38 to 40 degrees Celsius. Temperatures drop to 23–28 °C during the rainy season, which runs from June to September. Rainfall totals range from 500 to 1000 mm. <https://en.wikipedia.org/wiki/Gashua>. Employees of Federal University Gashua's Faculty of Agriculture, Department of Forestry and Wildlife Management, will carry out this investigation.

Sampling Techniques

Random sampling of nine (9) villages out of thirteen villages was adopted. The actual population of the aromatic and medicinal users/herbalist is not readily available. So we only estimated 30% of respondents in the study area during the reconnaissance survey. However, the study adopted the estimated 30% of participants in each of the selected village of the study area. This is based on the facts that 30% of population can give a satisfactory estimate of true population.

Data analysis

Descriptive statistics was used for the research. The results was displayed in tables, chart and frequency tables. Information aromatic and medicinal plants were arranged in order scientific name, family, local name, parts of plants used, disease cures and applications mode. The results of the survey was arrange in the order of the above in formations.

Results and Discussions

Aromatic and medicinal plants are essential to the Bade community's socioeconomic growth. The study was designed to assess the knowledge of bade commuters on ethno medicinal. The study considered both the herbalist and non-herbalist in the study since this is a traditional knowledge that can be transfer from one house to another without any barrier. However, the study indicated that 67% of the participants who

constitute one hundred and sixty-nine (196) participants were males in the study area. This confirmed the study conducted by (Mudansiru *et al.*, 2016) Mudansiru in Gumel Local Govt of Jigawa state. This however, confirmed the assumption that male genders in northern parts of Nigeria are the one that does the farming activities to provide their family with all their needs. This is because in the northern part of Nigeria, it is well-known tradition that the male are the one to provide their family with both food and health care. However the study further indicated that majority of the participants fall within the middle age which fall between the age bracket 30–40 years (33.3%) which was followed by (41–50) years (28.8)%. This contradicts the study conducted by (Mudansiru *et al.*, 2016) ^[3] which stated that older people are the custodian of ethno botanical knowledge however this could be that in some location of the northern part of Nigeria middle age are more concern about traditional medicine which might be due to the facts that the world is changing toward ethno medicine as a result continues awareness on the effectiveness of this ethno medicine. This result is agreeing with the findings reported by (Fakey *et al.* 2009) ^[2]. Who found that 66.5% of the respondents who reported the use of herbal medicines among pregnant women in Nigeria are 21 to 30 years of age. Majority of the participants were married which constitute 80% (201) of the participants in the study area. This could be attributed to the facts that married people especially the male take more responsibilities than any other. The Married male has wives and children to take care of unlike the unmarried male who only has them to care. The study revealed that 55% (137) of the participants have no formal education while 25% (63) attended one or two tertiary educations. This is consistent with the research done on the ethnobotanical survey of medicinal plants by (El-Mehdi *et al.*, 2021). He stated that utilization of medicinal plants is more abundant among illiterate people. This also agrees with the local assumption in Northern part of Nigeria that only illiterate people use ethno medicine for their health care. The major occupation among the participants is farming 51% (127). This could be because farmers are more conversant with these plants than any other occupants. This was followed by the house wives here is a clear indication that women contribute a lot in identifying aromatic plants because they use the plants more than any other gender table 1 below.

Table 1: Demographics distribution of participants in the study area

| Factor | Frequency | Percentage |
|---------------------------------------|-----------|------------|
| Gender | | |
| Male | 169 | 67.6 |
| Female | 81 | 32.4 |
| Age | | |
| 20-30 | 64 | 25.6 |
| 31-40 | 83 | 33.2 |
| 41-50 | 72 | 28.8 |
| 51-60 | 19 | 7.6 |
| 61-70 | 11 | 4.4 |
| 71-80 | 01 | 0.4 |
| Marital Status | | |
| Single | 48 | 18.8 |
| Married | 202 | 80.4 |
| Level of education | | |
| Secondary | 34 | 13.6 |
| Primary | 16 | 6.4 |
| Tertiary | 63 | 25.2 |
| No formal Education | 137 | 54.8 |
| Occupation of the participants | | |

| | | |
|---------------|-----|------|
| Herbalist | 19 | 7.2 |
| Civil Servant | 34 | 13.2 |
| Farmer | 128 | 50.8 |
| House Wife | 69 | 26.8 |

Table 2: Distribution of aromatic and medicinal plants by tree, species and family in bade LGA.

| Family | Species | Frequencies |
|------------------------|---------|-------------|
| <i>Amaranthaceae</i> | 1 | 1 |
| <i>Annonaceae</i> | 1 | 2 |
| <i>Apiaceae</i> | 2 | 2 |
| <i>Apocynaceae</i> | 1 | 4 |
| <i>Arecaceae</i> | 2 | 20 |
| <i>Asteraceae</i> | 2 | 2 |
| <i>Balanophoraceae</i> | 1 | 1 |
| <i>Burseraceae</i> | 1 | 1 |
| <i>Caricaceae</i> | 1 | 1 |
| <i>Combretaceae</i> | 2 | 3 |
| <i>Cucurbitaceae</i> | 3 | 16 |
| <i>Cyperaceae</i> | 1 | 1 |
| <i>Ebenaceae</i> | 1 | 26 |
| <i>Euphorbiaceae</i> | 1 | 1 |
| <i>Fabaceae</i> | 8 | 207 |
| <i>Lamiaceae</i> | 3 | 23 |
| <i>Lauraceae</i> | 1 | 1 |
| <i>Leguminosae</i> | 2 | 2 |
| <i>Liliaceae</i> | 2 | 12 |
| <i>Meliaceae</i> | 4 | 81 |
| <i>Rubiaceae</i> | 1 | 1 |
| <i>Moraceae</i> | 1 | 1 |
| <i>Moringaceae</i> | 1 | 8 |
| <i>Musaceae</i> | 1 | 17 |
| <i>Myristicaceae</i> | 1 | 2 |
| <i>Myrtaceae</i> | 2 | 107 |
| <i>Oleaceae</i> | 1 | 1 |
| <i>Orobanchaceae</i> | 1 | 6 |
| <i>Papayaceae</i> | 1 | 4 |
| <i>Pedaliaceae</i> | 1 | 8 |
| <i>Piperaceae</i> | 1 | 17 |
| <i>Poaceae</i> | 1 | 8 |
| <i>Pontederiaceae</i> | 1 | 9 |
| <i>Ranunculaceae</i> | 1 | 1 |
| <i>Rhamnaceae</i> | 1 | 54 |
| <i>Rutaceae</i> | 2 | 10 |
| <i>Solanaceae</i> | 3 | 12 |
| <i>Zingiberaceae</i> | 1 | 28 |
| <i>Zygaphyllaceae</i> | 1 | 27 |
| Total | 63 | 728 |

Through the survey, a total of sixty-three (63) species from thirty-nine (39) species was recorded from the survey. Within the family, the greatest number of species eight (8) was discovered. fabaceae. However this was followed by

meliaceae, Cucurbitaceae, and Lamiaceae with three (3) species each while Apiaceae, Arecaceae, Asteraceae, Combretaceae, Myrtaceae, Leguminosae and Liliaceae had two species each. As seen in table 2 above.

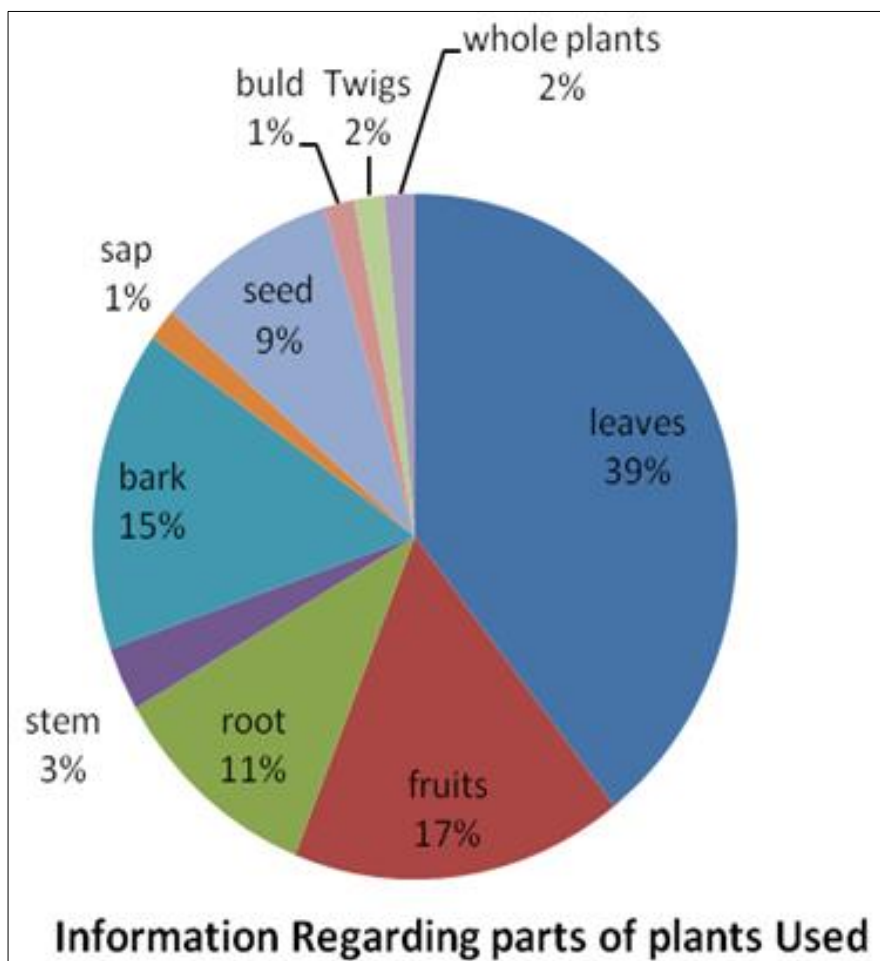
Dispersion of medicinal plants used by people of bade L.G.A Yobe State

| Botanical Name | Family | Local Title | Part of plants used | Disease Cures | Mode of Application |
|--|-----------------------|-------------|---------------------|---|--|
| <i>Balanites aegyptiaca Del.</i> | <i>Zygaphyllaceae</i> | Aduwa | Leaves/Fruits/Seed | Stomach ache and pile | Maceration Oral |
| <i>Allium cepa</i> | <i>Amaryllidaceae</i> | Albasa | Bulb, leaves | Rashes, GIT Disorders, digestion aid | Oral solution and eating raw |
| <i>Boswellia dalzielii</i> | <i>Burseraceae</i> | Arrarabi | Bark | Pile | Oral solution |
| <i>Musa sapientum</i> | <i>Musaceae</i> | Ayaba | Leaves/Fruits/Sap | Stomach upset, diarrhea and dysentery and fever | Oral solution and eating the fruits directly |
| <i>Ficus syscomorus</i> | <i>Moraceae</i> | Baure | Bark | Liver disease and pain killer | Oral solution |
| <i>Anacardium occidentale</i> | <i>Anacardiaceae</i> | Cashew | Leaves and Fruits | Use to reduce fever | Oral solution |
| <i>Sclerocarya birrea</i> (A. Rich.) Hochst. | <i>Anacardiaceae</i> | Daniya | Leaves | Antibiotic | Oral solution |
| <i>Azadirachta indica</i> | <i>Meliaceae</i> | Darbejiya | Leaves | Fever | Oral solution |
| <i>Vitex doniana</i> | <i>Lamiaceae</i> | Dinya | Stem | Rheumatic pains, diarrhoea, vomiting, dysentery, and inflammatory illnesses | Oral solution |

| | | | | | |
|---|---------------|--------------------|-----------------------------|--|---|
| Acacia nilotica | Fabaceae | Gabaruwa | Root/Bark/Leaves | Coughing, fever, malaria, headaches, chest ailments, weakness, and pneumonia | Leaves extract/ oral solution |
| Ficus platypoda | Meliaceae | Gamji | Fruit, Root, and Leaves | Gastrointestinal, respiratory, and cardiovascular disorders | Oral solution |
| Mitragyna inermis | Rubiaceae | Giyayya | Bark | Rhوماتism, Fever, Headache and leprosy | Oral solution |
| Hyphaene thebaica | Arecaceae | Goruba | Fruits | Preventing cancer, weight control, and lowering cholesterols, liver diseases, and diabetes | Oral solution |
| Psidium guajava L. | Myrtaceae | Guava | Leaves | Gastrointestinal diseases | Oral solution |
| Carica papaya | Papayaceae | Gwanda | Leaves | Gastrointestinal tract disorders, intestinal parasite infections, and as a sedative and diuretic | Oral solution |
| Ocimum gratissimum | Lamiaceae | Daidoya | Leaves | Cold medicinal | Ocimum gratissimum |
| Eucalyptus cameldulensis | Myrtaceae | Kafi amarya kanshi | Leaves | cough remedy and expectorant, | Oral solution |
| Diospyros mespiliformis | Ebenaceae | Kanya | Leaves and fruits | fevers, pneumonia, syphilis, leprosy and yaws | Leaves infusion |
| Piliostigma reticulatum (DC) Hochst | Leguminosae | Kargo | Roots | Gonorrhoea, hookworm, ascites and dropsy. | Infusions |
| Adansonia digitata | Bombacaceae | Kuka | Leaves, bark and seeds | malaria, tuberculosis, fever, microbial infections, diarrhoea, anaemia, dysentery, toothache | Oral solution Powder |
| Citrus sinensis | Rutaceae | Lemon tsami | Leaves and fruits | constipation, cramps, tuberculosis, cough, cold, obesity, menstrual disorder, angina, hypertension, anxiety, depression and stress | Leaves infusions and oral solution |
| Swietenia macrophylla | Meliaceae | Madachi | Leaves/bark, seed | natural antioxidant, anti-inflammatory, antibacterial | Oral solution |
| Pterocarpus erinaceus | Fabaceae | Madobiya | Bark | Digestive and nervous disorders | Decoction, calcination (oral, massage, scarification) |
| Ziziphus mauritiana | Rhamnaceae | Magarya | Root, Bark, and Seeds | heartburn biliousness, biliousness, astringency, scabies, diuretic, and nausea | Oral decoction and External application on a wound |
| mangifera indica | Anacardiaceae | Mangoro | Leaves/bark | antibacterial, anti fungal, anthelmintic, and anti parasitic | Oral solution |
| Anagessius leiocarpus | Combretaceae | Marke | Leaves | Fever, cough, antibacterial, anti fungal, anthelmintic. | Decoction and taken orally |
| Bauhinia rufescens Lam | Leguminosae | Matsatsagi | Leaves/bark/fruits | antidote to snake poison | Oral solution |
| Guiera senegalensis | Combretaceae | Sabara | Leaves | Treat a variety of microbial infections. | Oral decoction |
| Sida ovate Forssk. | Malvaceae | Sanya | Leaves/roots | Diarrhea | Oral solution |
| Vernonia amygdalina Delile | Asteraceae | Shuwaka | Leaves | Anti-malarial | Oral solution |
| Allium sativum L. | Fabaceae | Tafarnuwa | Fruits | Antibiotic and cold | Cook in food and external application of the decoction to the affected area |
| Tamarindus indica L. | Fabaceae | Tsamiya | leaves/seed | Diarrhea, constipation, fever, and malaria. | Oral solution |
| Calotropis procera | Apocynaceae | Tumfafiya | Leaves and fruits | Burn injuries, cancer and body pain | Externally |
| Moringa oleifera Lam | Moringaceae | Zogale | Leaves/root/seeds/ and stem | Blood pressure, antioxidants | Oral solution and direct administration of seeds |
| Vernonia strumambiguum (Kotschy and Peyr.) H.Rob. | Asteraceae | Tattaba | Twigs | diarrhoea, fungal and bacterial infections, and inflammation | Oral solution |
| Solanum incanum | Solanaceae | Gauta Garden egg | fruits/leaves/roots | Antibiotic | Externally and orally |

Information on the parts of plants used such as the leaves, Roots, bark, bold, seed, sap, twigs, fruits, stem and whole plants shows that leaves which was widely used has the highest frequency in the identified medicinal and aromatic plants with thirteen nine percent (39%) and was followed by fruits (17%) bark (15%), roots (11%), seed (9%), stem (3%) and others such as the twigs (2%), buld (1%) sap (1%) and the whole plants (2%). The same results were recorded in ethnobotanical study conducted by (Mahishi *et al.*, 2005) ^[13]

and slam, Md. K, *et al.*, (2013) ^[14]. In their studies, they indicated that several other ethnobotanical survey reports have also documented the widespread use of leaves in ethnomedicinal practise. This is due to the fact that leaves, the portion of the plant with the highest metabolic activity, are the primary site of photosynthesis. As a result, several biogenetic processes occur to generate secondary metabolites that add to its therapeutic value.



Disrtubution of aromatic plants used by people of bade L.G.A Yobe State

| | Botanical Name | Family | Local Name | Part of plants Used | Use of plants |
|----|----------------------------|----------------|--------------------|---------------------|-------------------------|
| 1 | Balanites aegyptiaca | Zygophyllaceae | Aduwa | Fruits | Spices |
| 2 | Allium cepa | Myrtaceae | Albasa | Leaves | Spices |
| 3 | Allium fistulosum | Amaryllidaceae | Albasa mai lawashi | Leaves and fruits | Spices |
| 4 | Aerva lanata | Amaranthaceae | Alhaji | Whole plants | Flavoring |
| 5 | Capsicum annum | Solanaceae | Attaruhu | Fruits | Spices |
| 6 | Musa X paradisiaca | Musaceae | Ayaba | Leaves | Flavoring and fragrance |
| 7 | Corchorus oilitorius | Malvaceae | Ayoyo | Leaves | Specie/Vegetable |
| 8 | Eichhornia crassipes | Pontederiaceae | Bado | Leaves | Fragrance |
| 9 | Acacia nilotica (L.)Delile | Fabaceae | Bagaruwa | Fruist | Fragrance |
| 10 | Anacardium occidentale L. | Anacardiaceac | Cashew nut | Leaves | Flavoring and Fragrance |
| 11 | Zingiber officinale | Zingiberaceae | Citta | Root | Spices |
| 12 | Murraya koenigii | Rutaceae | Curry | Leaves | Flavoring |
| 13 | Thymus vulgaris | Lamiaceae | Curry leaf | Leaves | Flavoring |
| 14 | Raphanus Sativus | Brassicaceae | Daikon | Root | Flavoring |
| 15 | Chrozophora senegalensis | Euphorbiaceae | Damaigi | Root | Astringent |
| 16 | Parkia biglobosa | Fabaceae | Daurawa | Leaves | Spices |
| 18 | Vitex doniana | Lamiaceace | Dinya | Fruits | Flavoring and Fragrance |
| 19 | Ocimum gratissimum | Lamiaceace | Daidoya | leaves | cold Medicinal |
| 20 | Parkia biglobosa | Fabaceae | Dorawa | Leaves | Flavoring and Fragrance |
| 21 | Eucalyptus cameldolensis | Mytaceae | Eucalyptus | Leaves | Fragrance |
| 22 | Lannea acida A. Rich. | Anacardiaceae | Faru | fruits | Flavoring |
| 23 | Allium sativum | Amaryllidaceae | Garlic | Fruits | Spices |
| 24 | Solanum incanum | Solanaceae | Gauta | Fruits | Spices |
| 25 | Cinnamomum verum J.Presl | Lauraceae | Girfa | fruits and leaves | Spices |
| 26 | Hyphaene thebaica | Arecaceace | Goruba | Fruits | Beverage |
| 27 | Cidium guajava | Myrtaceae | Guava | Fruits | Flavoring and Fragrance |
| 28 | Cucumis sativa | Cucurbitaceae | Gurji | Fruits | Aroma and Flavor |
| 29 | Bombox costatum | Fabaceae | Gurjiya | Fruits | Spices |
| 30 | Carica papaya L. | Caricaceae | Gwanda | Fruits | Flavoring |
| 31 | Annona senegalensis | Annonaceae | Gwanda jeji | Leaves | Flavoring and Fragrance |
| 32 | Arachis hypogea | Fabaceae | Gyada | Fruits | Spices |
| 33 | Monodora myristica | Leguminose | Gyadan miya | Fruits | Spices |

| | | | | | |
|----|--|-----------------|--------------------|-------------------|-------------------------|
| 34 | <i>Nigella sativa</i> | Ranunculaceae | Habba | Fruits | Fruits |
| 35 | <i>Eucalyptus cameldolensis</i> | Myrtaceae | Kafi amarya kanshi | leaves | Flavoring and Fragrance |
| 36 | <i>Cyperus articulatus</i> L. | Cyperaceae | Kajiji | Roots | Spicy Fragrance |
| 37 | <i>Parkia biglobosa</i> | Fabaceae | Kalwa | Fruits | Spices |
| 38 | <i>Syzygium aromaticum</i> | Myrtaceae | Kaninfari | Fruits | Flavoring and spices |
| 39 | <i>Citrullus lanatus</i> | Cucurbitaceae | Kankana | Leaves | Flavoring and Fragrance |
| 40 | <i>Diospyros mespliformis</i> | Ebenaceae | Kanya | Fruits | Repellants |
| 41 | <i>Xylopia aethiopica</i> | Annonaceae | Kimba | Fruits | Spices |
| 42 | <i>Striga hermothica</i> | Orobanchaceae | Kuduji | Leaves | Repellants |
| 43 | <i>Adansonia digitata</i> | Malvaceae | Kuka | Fruits | Spices |
| 44 | <i>Thonningia sanguinea</i> Vahl. | Balanophoraceae | Kulla | Fruits and Leaves | Rhizome |
| 45 | <i>Coriandrum sativum</i> | Apiaceae | Kusbara | Seed | Culinary spice |
| 46 | <i>Corchorus olitorius</i> | Malvaceae | Lalo | Leaves | Species |
| 47 | <i>Cymbopogon citratus</i> | Poaceae | lemon grass | Leaves | Beverage |
| 49 | <i>Citrus sinensis</i> | Rutaceae | Lemon tsami | Fruits | Flavoring and Fragrance |
| 50 | <i>Lillium</i> | Liliaceae | Lily | Leaves | Beverage |
| 51 | <i>Ziziphus mauritiana</i> | Rhamnaceae | Magarya | Fruits | Flavoring and fragrance |
| 52 | <i>Cassia occidentalis</i> L. | Fabaceae | Majamfari | Roots | Flavoring |
| 53 | <i>Mangifera indica</i> | Amoryllidaceae | Mangoro | Fruits | Flavoring and Fragrance |
| 54 | <i>Lens culinaris</i> | Fabaceae | Masoro | Seed | Culinary |
| 55 | <i>Myristica fragrans</i> | Myristicaceae | Masoro | Fruits | Spices |
| 56 | <i>Mentha piperita</i> L. | Lamiaceae | Na a naa | Leaves | Flavoring and Fragrance |
| 57 | <i>Parkia biglobosa</i> | Fabaceae | Parkia biglobosa | Fruits | Spices |
| 58 | <i>Sesamum alatum</i> Thonn. | Pedaliaceae | Ridi Barewa | Fruits | Flavoring and Fragrance |
| 59 | <i>Cucumis melo</i> L. | Cucurbitaceae | Sweet milon | Fruits | Flavoring |
| 60 | <i>Allium sativum</i> | Amoryllidaceae | Tafarnuwa | Fruits | Spices |
| 61 | <i>Artemisia annua</i> | Arteraceae | Tagargade | Leaves | Spices |
| 62 | <i>Piper nigrum</i> | Piperaceae | Tattasai | Fruits | Spices |
| 63 | <i>Detarium microcarpum</i> Guill. And Perr. | Fabaceae | Taura | Fruits | Spices |
| 64 | <i>Thymus vulgaris</i> | Lamiaceae | Thyme | Leaves | Spices |
| 65 | <i>Tamarindus indica</i> | Fabaceae | Tsamiya | Fruits | Spices |
| 66 | <i>Tamarindus indica</i> | Poaceae | Tsamiya | Fruits | Flavoring and Fragrance |
| 67 | <i>Lycopersicon lycopersicum</i> | Solanaceae | Tumatur | Fruits | Spices |
| 68 | <i>Eucalyptus camaldulensis</i> Dehnh | Myrtaceae | Turare | Leaves | Fragrance |
| 69 | <i>Hibiscus sabdariffa</i> | Malvaceae | Yakuwa | Leaves | Aroma and fragrance |
| 70 | <i>Pimpinella anisum</i> | Apiaceae | Yansun | Seed | Flavor and aroma |
| 71 | <i>Olea europaea</i> | Oleaceae | Zaitun | Fruits | Fragrance |
| 72 | <i>Hibiscus sabdariffa</i> | Malvaceae | Zobo | Leaves | Aroma and fragrance |
| 73 | <i>Moringa oleifera</i> | Moringaceae | Zogale | Leaves | Spices |

Conclusion

The study indicated that most of the commutes used for this study are in remote areas that are far away from urban areas and have no access to means of transportation hence limited access to healthcare facilities. Their daily medical treatment heavily depends on ethnomedicinal practice. Although in this century, the knowledge of ethnomedicinal is in increasing because of its natural component and scientifically to have no side effects, unlike the conventional medicinal.

The present survey gives an overview of aromatic and medicinal plants used by bade community in gashua yobe state. Different aromatic and medicinal plants were identified with their parts used and their mode of application for flavouring and treatment of certain ailments. The present survey was able to identified sixty-three (63) species from thirty-nine (39) species with the ailment treated by every identified plant.

While this survey will help in preserving aromatic and medicinal plants, it is pertinent to note that taking a stronger step for propagating these species especially those that vulnerable or even endangered. It is important that the policy makers should as a matter urgent creates more awareness on the need to preserve these species. Government also encouraging the validation and patronization of ethno medicinal to complement inadequate access to modern medical faculties.

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