

Traditional medicinal plant species belonging to Fabaceae family in Ethiopia: A systematic review

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Abstract

There are approximately 213 families of flowering plants in Ethiopia and among them 92 families contain species with medicinal properties. However, there is no compiled information that comprehensively expresses which plant species belong to each family. In the present review, a total of 127 medicinal plant species belonging to Fabaceae family and used to treat various human and livestock diseases were reported from 62 articles (53 published and 9 unpublished journals). *Calpurnia aurea* (26.7%) and *Milletia ferruginea* (11.8%) were among the most frequently cited species of Fabaceae followed by *Trigonella foenum-graecum* (11.02%). The highest numbers of species of Fabaceae (62 species) were reported from Southern Nation Nationalities Peoples (SNNP) region, and 58 species were from Oromia region. Regarding growth habit, the majority were shrubs (43 species) followed by tree (39 species) and herbs (38 species). The frequently used plant parts were leaves (19.7%) roots (17.3%) and the whole plant (16.5%). 40.5 % of the prepared medicinal plant remedies of Fabaceae were administered through the oral methods in different regions of the country. The most commonly treated health problems by species of Fabaceae were: snake bites (25 species), evil eye (19 species) and wounds (18 species) in various regions of the country. From the finding, it was concluded that Fabaceae family is providing a diverse medicinal plant species for the treatment of different human and livestock health care systems in Ethiopia. Thus, further research activities on phytochemical characterization and conservation would be suggested for better utilization from this family.

Introduction

Man needs plants for all his needs like food, shelter, and medicines; consequently, he has exploited almost all the species coming under over 450 angiosperm families.¹ The family Poaceae (Graminae) to which all the grasses belong and the family of pulses, Fabaceae are the two most significantly exploited by mankind. Similarly, although all plants are medicinal only about 20 families are found to be most dominant as the families of medicinal plants. Fabaceae is the most interminably used family showing more than 25 percent of representation. Fabaceae is the third-largest family in terms of the number of species of flowering plants behind Orchidaceae and Asteraceae, with about 751 genera and some 19,000 known species.¹⁻⁶

Fabaceae or Leguminosae is a large and economically important family of flowering plants which is commonly known as the legume family, pea family, bean family or pulse family. The name 'Fabaceae' comes from the defunct genus *Faba*, now included in *Vicia*. This family has extremely diverse characteristics which make it as one of the most important groups of plant; because they are used by humans as crops, green manures, and forages. These plants are also used to synthesize a large range of natural products including flavors, poison, dyes, and also has great importance in medicinal purpose.⁷ Many species of plants belonging to multiple families are cataloged as medicinal plants based on the presence of specific chemical constituents and their effects on the biological systems.⁸ Fabaceae and Poaceae are among the largest plant families having medically and therapeutically useful species all over the world.⁹⁻¹¹ Recognition of the plant usage pattern by the traditional communities could indicate the underlying phytochemical properties of the plant. In various ethnobotanical and ethnomedicinal plant surveys, it was observed that certain plant families and higher taxa are used more extensively than others.¹²

There are about 213 families of flowering plants in Ethiopia and of these 92 families are known to contain species with medicinal properties.¹³ Even though different studies have been conducted on traditional medicinal plants of different families used to treat various human and livestock diseases in different parts of Ethiopia, there was no systematic review work that comprehensively expresses the medicinal plant species belonging to Fabaceae family. Therefore, the objective of this review was to assess medicinal plant species used in traditional medicine and belong to the Fabaceae family. It gives comprehensive

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information on the parts of the Fabaceae family in the traditional medicine of the country, diseases type treated, name of plants, route of administration, plant part used, and the habit of the plant used as well as the region from which the species collected.

Characteristics and importance of fabaceae family

The main and unique feature of this family is its legumes which are the fruit of the plant. Species of this family range from herbs, vines, trees, and shrubs with usually alternate, stipulate, pinnately to palmately compound leaves (sometimes unifoliate or simple). Flowers: a short, cup-like hypanthium present; usually 5 sepals and petals, free or connate; petals all alike or the uppermost one differentiated (banner), the lower two forming a keel or flaring apart; 5 or 10 to many stamens, if connate then monadelphous or diadelphous; 1 carpel on a short stalk.⁶ The family Leguminosae is also divided into 3 subfamilies papilionoideae, Caesalpinioideae, and Mimosoideae. Sometimes these subfamilies are also recognized as a separate and independent fam-

ily. The identification of these subfamilies is done by their flowers.¹⁴ Fabaceae family has several economic benefits, by consisting of various food crops the family provides highly nutritious sources of protein and micronutrients that can benefit health and livelihoods, particularly in the developing countries.^{4,15} The nutritional value of crops of the Fabaceae family is to a great extent due to their ability to fix atmospheric nitrogen for protein synthesis.¹⁶ In socio-economic terms, the family is also important for health and human alimentation is highlighted, although they also provide wood resources and dyes, resins, insecticides, fibers, fodder, and so forth.^{17,18} Legumes of this family are also used for economically for nitrogen fixation. as legumes can convert the atmospheric nitrogen into useful nitrogenous compounds, which are used for the growth of plant³ and have ecological attention too because the organism adapted well adapted to the first colonization and exploration of several environments, adaptations caused by their association with nitrogen-fixing bacteria or with ectomycorrhizal.⁵ The family have association with bacterium of the genus *Rhizobium* located in root nodules found in many species of Fabaceae, converting atmospheric nitrogen into ammonia, a soluble form used by other plants, as suppliers of natural fertilizers, in addition to their considerable importance in agriculture, representing their ability to occupy different habitats and diverse life forms.^{4,17,18}

Statement of the problem

Man recognized and utilizing plants for various purposes like food, shelter, and medicines. However, all the species coming under over 450 angiosperm families were not equally exploited. However, only about 25 families are found to be extremely vital and crucial for the sustenance of the human race on the earth. These families were more exploited than others for traditional medicine and other purposes.¹ The beginnings of the medicinal plants' use were instinctive, as is the case with animals.¹⁹ In time, the reasons for the usage of specific medicinal plants for the treatment of certain diseases were being discovered; thus, the medicinal plants' usage gradually abandoned the empiric framework and became founded on explicatory facts.²⁰ In Ethiopia, it is estimated that there are about 6500-7000 species of higher plants making the country one of the most diverse floristic regions in the world. Also, there are large numbers of moderate to high-value medicinal plants herbs and spices existing in the wild and providing a vital contribution to human and livestock health care needs throughout the country.²¹

These plants collected for the traditional medicinal purpose from the wild in various parts of the country belong to different families. Similarly, although all plants are medicinal only about 20 families are found to be most dominant as the families of medicinal plants. Many studies pointed out that family Fabaceae found amongst the five botanical families richest in therapeutic properties. However, the composition of each family concerning their species number that utilized for traditional medicine in different parts of Ethiopia is not yet compiled. Therefore, this review is to compile different medicinal plant species belonging to the Fabaceae family in the country.

Materials and methods

On the current review, the traditional medicinal plant species that belongs to the Fabaceae family and used to treat various human and livestock ailments in different parts of Ethiopia were assessed from different sources. In the process, research literature associated with medicinal plants used for the treatment of human and livestock diseases by indigenous people in different ethnic communities from the last two decades were assessed. In each literature, plant species belongs to the *Fabaceae* family was systematically identified for their description (growth form, parts used, the type of the disease treated and route of administration).

Published literatures on the ethnobotany of medicinal plants in Ethiopia were collected through a manual Google search. Besides, articles were also searched from databases (PubMed, Google Scholar, and Research Gate). No restriction was applied to the year of publication, methodology, or study subjects. In the compilation of the data, some corrections were made on the scientific names of the plant species of the Fabaceae family.

Inclusion/exclusion criterion

In this review, literatures that contain complete ethnobotanical data and family names to which the recorded plant species belongs were included with no restriction to the year of publication. Both published and unpublished (M.Sc. or Ph.D. thesis) research reports on ethnobotanical knowledge were also reviewed. However, literatures that do not contain complete ethnobotanical data and do not address family names of the plant species belong were excluded from this review. Also, research articles that did not contain the year of publication were excluded.

Data analysis

The compiled plant species belonging to Fabaceae family from reported Ethnobotanical studies in different areas of the country were entered into an Excel spreadsheet and summarized using descriptive statistics. Then, the data were filtered to determine frequencies and percentage of citations to categorize the most commonly treated health problems of human or livestock, parts used and route of administration, the region where the plant studied and habit of medicinal plants in the family. The results were presented using tables, pie charts and bar charts.

Results and discussion

In this review, a total of 127 medicinal plant species belonging to Fabaceae family and used to treat various human and livestock diseases were reported from 62 articles (53 published and 9 unpublished journals) by different authors conducted in different regions of Ethiopia. The information on the ethnomedicinal plants was recorded primarily from the informants in the study area by researchers all the data required including the families to which the plants' species were belongs to. From the articles, only the plant species of the Fabaceae family were extracted for the compilation of this review. The detail of all identified medicinal plants belonging to the Fabaceae family with their respective vernacular names, the region of collection, parts used, habit, disease type treated, and method of administration was presented in (Appendix 1).

The most frequently cited medicinal plant species of fabaceae by different researchers

In the country-wide, many medicinal plants are documented to be used for the treatment of various human and livestock diseases. These plant species belonged to different families and genera. It was found that the Fabaceae family is with a relatively high proportion of medicinal utilized species.²²⁻²⁸ Among the medicinal plants of Fabaceae, some of them were frequently cited in the studies conducted in various regions of the country. The same plant species have been utilized in most areas of the country to treat different ailments even though there are slight variations in their ethnobotanical application (*i.e.*, the diseases can be treated and used parts). Of the total plants' species, 20 species were the most frequently cited medicinal plant of the Fabaceae family (5 and more each) in the

different ecological areas to treat various ailments of humans or livestock. *Calpurnia aurea* and *Millettia ferruginea* were among the most frequently cited species accounting 26.7 and 11.8 percent respectively of citation of the total reviewed plants followed by *Trigonella foenumgraecum* with citation of 11.02% (Table 1).

The result revealed that the traditional healers or local communities in different regions of Ethiopia have a rich indigenous knowledge to select the specific plant species to treat a particular disease of human or livestock. Several findings in various areas of the country,²⁴⁻²⁶ reported that family Fabaceae takes a major part in the traditional medicine practice in different areas of the country to treat human and livestock ailments. Similarly,¹⁸ reported that, in Argentina, local populations have identified and learned about the use of Fabaceae, including them in their daily lives as food and or medicine. Many plant species of Fabaceae were identified as medicinal plants by the traditional hears or local communities may be due to their accumulation of secondary metabolites at various parts (leaf, stem, root, and seeds).

Plant species of fabaceae family in different part of Ethiopia

Medicinal plants of Fabaceae family were documented in various regions of the country by numerous researchers. From the

reviewed literatures, the highest numbers of species belonging to Fabaceae (62 species) were reported from the Southern Nation Nationalities Peoples (SNNP) region of various agro-ecological zone, followed by 58 species from Oromia region (Figure 1).

The result of present review depicted the distribution of plant species belonging to Fabaceae varies in different regions and local peoples recognize them with the external appearance of the plants and traditional knowledge to utilize the parts (leaves, stems, roots, barks seeds, and flowers) for the treatment human and livestock health problem. In the regions where the highest number of species of Fabaceae reported, several researchers have been conducted studies in the area for the documentation of ethnobotanical information. The relevance of such information is vital at present to retrieve several threatened medicinal plant species and for better future utilizations.

Growth form of plant species of fabaceae

Regarding the growth habit of the reviewed species in different literatures used in traditional medicine and belongs to the Fabaceae family, the majority were shrubs (43 species) followed by tree (39 species) and herbs (38 species). It was observed that there was no significant variation on the growth habits (tree, shrubs, and herbs) for the plant species belonging to

Fabaceae in the regions where they collected and studied. However, climbers (7 species) accounts for the minimum number of plant species in the family (Figure 2).

The predominance shrub types in plant species of Fabaceae at the various areas of the country, indicate that most species of the family having a growth habit that branches rising from lower part of the stem (near to the ground). This result agrees with a report of¹⁸ in which a high proportion of woody Fabaceae (trees and shrubs) were observed in Argentina. Similarly, other habits of life such as trees and herbs were also observed on the plant species of the family.^{1,3} This growth form of the family is characterized by woody or semi-woody structures with varying sizes.

Plant parts used and route of administration

The plant parts of the Fabaceae family recorded being used for the treatment of human and livestock diseases were leaves, barks, fruits, seeds, roots, whole plant and combination of plant parts (Appendix 1). Concerning plant parts used of species belonging to Fabaceae, the most frequently used parts were leaves (19.7%), followed by root (17.3%) and the whole plant (16.5%), whereas stem, fruit, seeds, and combinations of some part were the least used and further details were given in Table 2. Unlike the present finding,²⁹ in Brazil

Table 1. List of the most cited ethnomedicinal plant species belonging to Fabaceae family.

No	Plant names	No. of citation	%	References
1	<i>Acacia abyssinica</i> Hochst. ex Benth	12	9.4	[24] [33] [25] [26] [34] [35] [36] [37] [38] [39] [29] [40]
2	<i>Acacia mellifera</i> Benth	5	3.9	[41] [42] [43] [44] [45]
3	<i>Acacia nilotica</i> (L.) Willd. ex Del.	7	5.5	[46] [47] [48] [43] [44] [30] [49]
4	<i>Acacia oerfota</i> (Forssk.) Schweinf.	5	3.9	[24] [45] [46] [47] [43]
5	<i>Albizia gummifera</i> (J. F. Gmel.) C.A. Sm.	5	3.9	[25] [50] [51] [39] [23]
6	<i>Albizia malcophylla</i> (A. Rich.) Walp	5	3.9	[25] [52] [53] [54]
7	<i>Albizia schimperiana</i> Oliv.	7	5.5	[26] [28] [55] [56] [57] [29] [58]
8	<i>Calpurnia aurea</i> (Ait.) Benth.	34	26.7	[25] [59] [22] [40] [60] [61] [62] [63] [36] [64] [55] [65] [66] [67] [32] [33] [34] [46] [39] [37] [57] [68] [38] [35] [69] [50] [48] [70] [31] [41] [71] [57] [52] [72]
9	<i>Entada abyssinica</i> Steud. ex A. Rich	5	3.9	[23] [24] [54] [57] [48]
10	<i>Erythrina abyssinica</i> Lam.,	6	4.7	[26] [54] [49] [64] [32] [52]
11	<i>Erythrina brucei</i> Schweinf	10	7.8	[23] [28] [61] [54] [49] [64] [73] [74] [34] [68]
12	<i>Indigofera spicata</i> Forssk.	8	6.3	[24] [25] [54] [22] [63] [59] [34] [30]
13	<i>Millettia ferruginea</i> (Hochst.) Bark	15	11.8	[75] [50] [31] [68] [38] [57] [39] [29] [76] [55] [49] [59] [63] [23] [77]
14	<i>Pterolobium stellatum</i> (Forssk.)	8	6.3	[24] [36] [56] [65] [32] [38] [48] [71]
15	<i>Senna didymobotrya</i> (Fresen.) Irwin & Barneby.	5	3.9	[34] [39] [57] [35] [78]
16	<i>Senna italica</i> Mill.	7	5.5	[22] [45] [46] [79] [48] [80] [44]
17	<i>Senna occidentalis</i> (L.) Link	7	5.5	[29] [57] [35] [31] [48] [74] [32]
18	<i>Senna petersiana</i> (Bolle) Lock	5	3.9	[54] [63] [29] [34] [57]
19	<i>Tamarindus indica</i> L.	10	7.8	[24] [27] [22] [40] [45] [54] [65] [42] [37] [71]
20	<i>Trigonella foenumgraecum</i> L.	14	11.02	[58] [54] [36] [81] [73] [29] [32] [33] [48] [39] [37] [77] [82] [49]

reported that with plant parts of the Fabaceae family, the bark (28.57%) and stem (26.53%) are the most commonly used parts.

From the analysis of the route of administration of medicinal plants of Fabaceae family for the treatment of various diseases of humans and livestock, the different methods were used. The analysis revealed that the majority of the prepared remedies were applied through oral method 51 species (40.1%) followed by various routes in different area 19 species (14.9%) and 13 species (10.2%) only dermal. Oral and nasal, smoking, smoking and dermal, and urogenital account the least number, each 90.8% (Figure 3).

The result indicated that 40.5% of the prepared medicinal plant remedies of Fabaceae were administered through the oral methods in different regions of the country. However, 14.9% of the remedy was not following similar applications in various regions. In some areas, peoples may use an oral method to apply the prepared remedy whereas in other areas the application method may be external or nasal or dermal or topical.

Diseases treated by medicinal plants of fabaceae

From the analysis of the review result, various human and livestock health problems were treated by the plants of the Fabaceae family in different regions of Ethiopia. Among the identified diseases in a different area of the country, 13 health problems were the most common diseases which were treated by plants of the Fabaceae family, each with more than six species (Table 3). For instance, snake bite along is treated by 25 plant species of Fabaceae followed by evil eye and wound (19 and 18 species respectively) in various regions of the country. The rationale behind this is that people's different ecological areas have particular selection criteria species of Fabaceae for the type of a particular disease. Also, information on the use of a particular medicinal plant for the treatment of health problems disseminates from region to region through the traditional system.

Among the studied medicinal plants of the Fabaceae family in different areas of the country, fresh forms (83 species) of the plants were the most commonly used followed by fresh and dry from (26 species) as indicated in Figure 4.

Many authors reported that traditional healers and local peoples who depend on the medicinal plant to treat diseases believe that fresh preparations more effective than the other condition of preparation in curing of the identified health problem. In consis-

tence, to the present result, several authors reported that most of the remedies of medicinal plants were prepared from fresh plants.³⁰⁻³² When compared to the dry form, the preparation of traditional medicines

from the fresh part has a significant impact on the species survival if it includes the use of the root part and whole plant. When the dry forms were used, which can be preserved for longer periods and minimize the

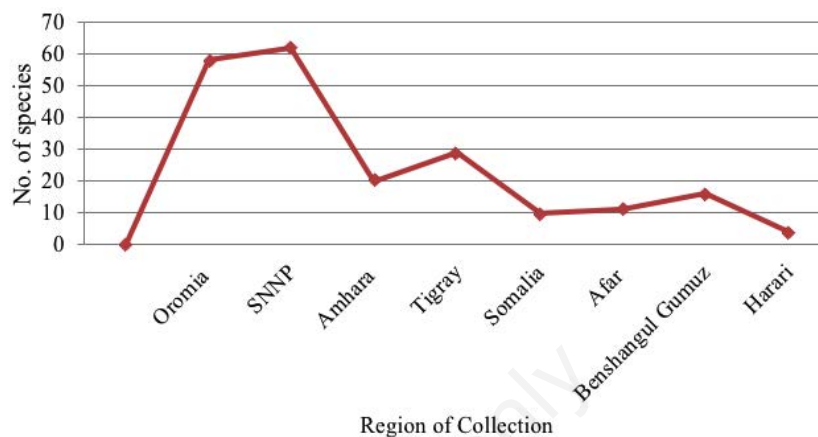


Figure 1. Medicinal plant species of Fabaceae from different regions.

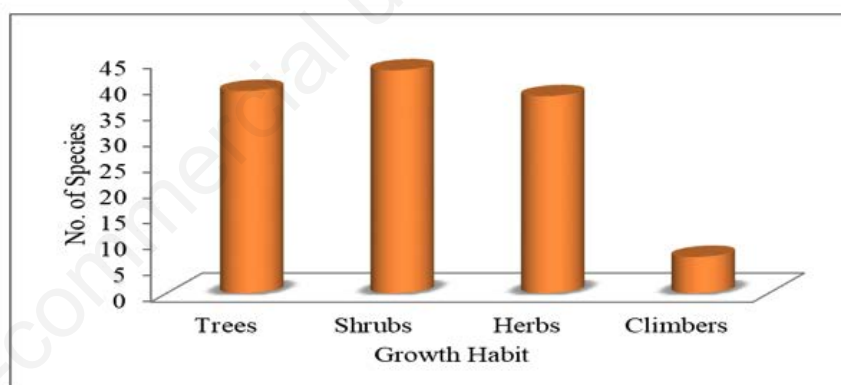


Figure 2. Growth habit of medicinal plant species of Fabaceae family.

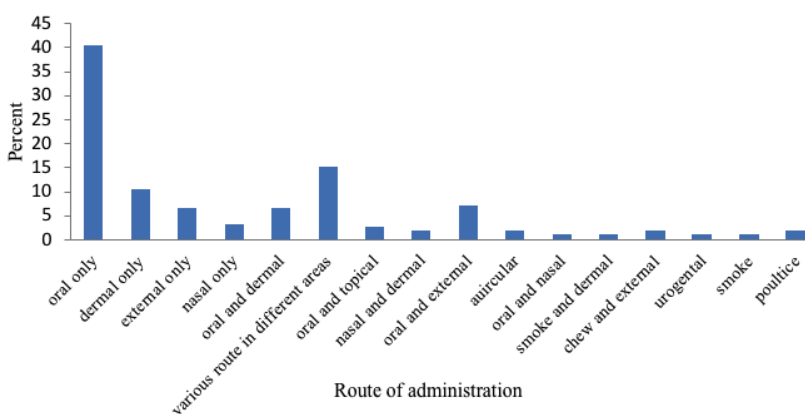


Figure 3. Route of administration of plant species of Fabaceae.

threatening of particular species including species of Fabaceae in the area where they grow. The possible reason for this may be due to the effectiveness of fresh medicinal plants in treatment as the contents (secondary metabolites) are not lost before use compared to the dried forms.

Concerning the treatment category of the reviewed medicinal plants of Fabaceae, 86 species (67.7%) were used for treatment of only human diseases, four (3.15%) were used to treat only livestock diseases, and the remaining 37 species (29.1%) were used for treating both human and livestock diseases (Figure 5).

The result indicated that the majority of medicinal plants of Fabaceae were used to treat human ailments in a different area of the country. Similar, ²⁵ reported that most medicinal plants were used to treat human health problems.

Conclusions

In the present review, a total of 127 medicinal plant species belonging to the Fabaceae family were reported from 62 articles (53 published and 9 unpublished journals) by different authors conducted in different regions of Ethiopia. This revealed the high level of usefulness of Fabaceae species in traditional herbal medicine in Ethiopia. The family presented an expressive amount of medicinal plant species used for the treatment of different human and livestock health care system, proving the great importance of the family to the local communities in the use of herbal medicine.

Of the total plants' species, 20 species were the most frequently cited medicinal plant of the Fabaceae family (5 and more each) in the different ecological areas to treat various ailments of humans or livestock. *Calpurnia aurea* and *Milletia ferruginea* were among the most frequently cited species accounting 26.7 and 11.8 percent respectively of citation of the total reviewed plants followed by *Trigonella foenumgraecum* with citation of 11.02%. The highest numbers of species of Fabaceae (62 species) were reported from the Southern Nation Nationalities Peoples (SNNP) region of the various agro-ecological zone and the most frequently used plant parts were leaves (19.7%). Among the diseases treated, snake bite along is treated by 25 plant species of Fabaceae followed by evil eye and wound (19 and 18 species respectively) in various regions of the country.

The result indicates that there is a well-defined selection criterion of medicinal plants species of Fabaceae among the tradi-

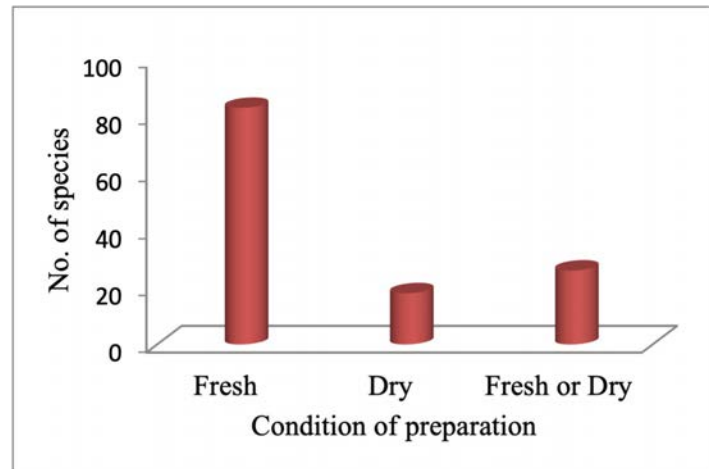


Figure 4. Condition of preparation of medicinal plants of Fabaceae.

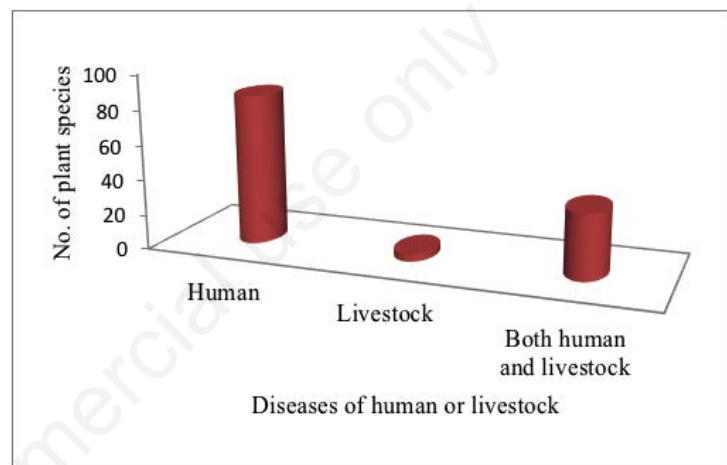


Figure 5. Use category of medicinal plants of Fabaceae.

Table 2. Frequency of plant parts used to treat human and livestock diseases species belonging to the Fabaceae family.

No.	Plants Parts	Frequency	% total
1	Leaf only	25	19.7
2	Root only	22	17.3
3	The whole plant	21	16.5
4	Leaf and root	17	13.4
5	Leaf, root, and stem	10	7.9
6	Seed only	9	7.1
7	Stem only	8	6.3
8	Leaf and stem	4	3.1
9	Fruit only	2	1.6
10	Leaf and fruit	2	1.6
11	Leaf, stem, and seed	2	1.6
12	Leaf, fruit, and seed	1	0.8
13	Root and stem	1	0.8
14	Root, fruit, and stem	1	0.8
15	Leaf and seed	1	0.8
16	Leaf, root, and seed	1	0.8

The whole plant part = stem bark, stem, leaf, root, seed, and fruit.

Table 3. The types of human and livestock diseases treated with the plant species belonging to the Fabaceae family.

Disease type	Species used to treat the diseases	Total	%
1 Snake bite	<i>Zornia pratensis</i> , <i>Zornia glochidiato</i> , <i>Vicia sp.</i> , <i>Stylosanthes fruticosa</i> , <i>Senna septemtrionalis</i> , <i>Senna petersiana</i> , <i>Senna obtusifolia</i> , <i>Senna italica</i> , <i>Pterocarpus lucens</i> , <i>Lotus corniculatus</i> , <i>Indigofera sp.</i> , <i>Indigofera spicata</i> , <i>Indigofera costata</i> , <i>Ficus ovate</i> , <i>Dichrostachys cinerea</i> , <i>Dalbergia lacteal</i> , <i>Chamaecrista mimosoides</i> , <i>Calpurnia aurea</i> , <i>Alysicarpus ferrugineus</i> , <i>Albizia schimperiana</i> , <i>Albizia gummifera</i> , <i>Acacia tortilis</i> , <i>Acacia sieberiana</i> , <i>Acacia abyssinica</i> , <i>Dalbergia lacteal</i>	25	19.7
2 Diarrhea	<i>Acacia albida</i> , <i>Calpurnia aurea</i> , <i>Crotalaria albicaulis</i> , <i>Crotalaria jijigensis</i> , <i>Delphinium dasycaulon</i> , <i>Entada abyssinica</i> , <i>Senna obtusifolia</i> , <i>Senna spp.</i> , <i>Stylosanthes fruticosa</i> , <i>Tamarindus indica</i> , <i>Pterolobium stellatum</i> , <i>Indigofera spicata</i> , <i>Crotalaria incana</i> , <i>Acacia tortilis</i> , <i>Senna singueana</i>	15	11.8
3 Evil eye	<i>Acacia abyssinica</i> , <i>Acacia dolichocephala</i> , <i>Acacia melanoxydon</i> , <i>Acacia oerfota</i> , <i>Acacia robusta</i> , <i>Albizia gummifera</i> , <i>Albizia schimperiana</i> , <i>Colutea abyssinica</i> , <i>Crotalaria albicaulis</i> , <i>Erythrina abyssinica</i> , <i>Erythrina brucei</i> , <i>Glycine wightii var. longicauda</i> , <i>Indigofera arrecta</i> , <i>Indigofera spicata</i> , <i>Piliostigma thonningii</i> , <i>Rhynchosia malacotricha</i> , <i>Senna italica</i> , <i>Sida ovate</i> , <i>Taverniera abyssinica</i>	19	14.9
4 Wound	<i>Vicia faba</i> , <i>Tamarindus indica</i> , <i>Sesbania sesban</i> , <i>Senna septemtrionalis</i> , <i>Piliostigma thonningii</i> , <i>Milletia ferruginea</i> , <i>Crotalaria labumifolia</i> , <i>Crotalaria incana</i> , <i>Cordia purpurea</i> , <i>Albizia sp.</i> , <i>Acacia etbaica</i> , <i>Acacia abyssinica</i> , <i>Acacia lahi</i> , <i>Acacia melanoxydon</i> , <i>Acacia Senegal</i> , <i>Desmodium barbatum</i> , <i>Desmodium gangeticum</i> , <i>Erythrina brucei</i>	18	14.2
5 Stomachache	<i>Acacia albida</i> , <i>Acacia brevispica</i> , <i>Acacia nubica</i> , <i>Acacia persiciflora</i> , <i>Acacia tortilis</i> , <i>Albizia schimperiana</i> , <i>Dichrostachys cinerea</i> , <i>Erythrina brucei</i> , <i>Indigofera spicata</i> , <i>Senna italica</i> , <i>Senna occidentalis</i> , <i>Tamarindus indica</i> , <i>Tephrosia bracteolata</i> , <i>Trigonella foenumgraecum</i>	14	11.0
6 Malaria	<i>Vigna vexillata</i> , <i>Tephrosia gracilipes</i> , <i>Tamarindus indica</i> , <i>Sesamum indicum</i> , <i>Rhynchosia elegans</i> , <i>Entada abyssinica</i> , <i>Cicer arietinum</i> , <i>Cassia arereh</i> , <i>Calpurnia aurea</i> , <i>Albizia malcophylla</i> , <i>Acacia robusta</i> , <i>Albizia amara</i>	12	9.4
7 Eye diseases	<i>Acacia hockii</i> , <i>Acacia oerfota</i> , <i>Acacia tortilis</i> , <i>Albizia malcophylla</i> , <i>Calpurnia aurea</i> , <i>Erythrina brucei</i> , <i>Senna didymobotrya</i> , <i>Senna spp.</i> , <i>Tephrosia bracteolata</i> , <i>Trichodesma zeylanicum</i>	10	7.9
8 Body swelling	<i>Acacia etbaica</i> , <i>Acacia seyal</i> , <i>Acacia sp.</i> , <i>Albizia gummifera</i> , <i>Crotalaria retusa</i> , <i>Sesbania sesban</i> , <i>Trifolium campestre</i> , <i>Trigonella foenumgraecum</i> , <i>Vicia faba</i>	9	7.1
9 Abdominal pain	<i>Zornia pratensis</i> , <i>Zornia apiculata</i> , <i>Trigonella foenumgraecum</i> , <i>Senna alexandrina</i> , <i>Medicago polymorpha</i> , <i>Indigofera spicata</i> , <i>Indigofera arrecta</i> , <i>Erythrina brucei</i> , <i>Erythrina abyssinica</i> , <i>Calpurnia aurea</i> , <i>Acacia etbaica</i>	11	8.6
10 Skin infection	<i>Acacia abyssinica</i> , <i>Crotalaria labumifolia</i> , <i>Dichrostachys cinerea</i> , <i>Lathyrus sativus</i> , <i>Milletia ferruginea</i> , <i>Trigonella polycerata</i> , <i>Tamarindus indica</i>	7	5.5
11 Tonsillitis	<i>Acacia etbaica</i> , <i>Acacia nilotica</i> , <i>Acacia pilispina</i> , <i>Acacia tortilis</i> , <i>Erythrina abyssinica</i> , <i>Indigofera spicata</i>	6	4.7
12 Parasites (internal and external)	<i>Acacia abyssinica</i> , <i>Acacia melanoxydon</i> , <i>Acacia nilotica</i> , <i>Acacia seyal</i> , <i>Albizia anthelmintica</i> , <i>Calpurnia aurea</i> , <i>Dalbergia lacteal</i> , <i>Erythrina brucei</i> , <i>Tamarindus indica</i> , <i>Taverniera abyssinica</i> , <i>Trigonella foenumgraecum</i>	11	8.6
13 Tooth pain	<i>Indigofera vohemarensis</i> , <i>Entada abyssinica</i> , <i>Crotalaria sp.</i> , <i>Calpurnia aurea</i> , <i>Acacia oerfota</i> , <i>Acacia nilotica</i> , <i>Acacia albida</i> , <i>Albizia gummifera</i> , <i>Astragalus atropilosus</i>	9	7.1

tional healers and people for the treatment of ailments of humans or livestock. Considering this review, there is many promising species of Fabaceae for further research on the characterization and an increase in ethnobotanical studies in the country, to support the phytochemical investigation of species is recommended.

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