

Research Article

# Identification of Ethno-Veterinary Practices for Animal Diseases in Assosa Zone

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## Abstract

Ethno-veterinary medicine is the application of traditional knowledge, theory, and practice to mitigate livestock diseases. The study conducted to document veterinary use of medicinal herbs of local users in Assosa Zone, Ethiopia from September 2022 to July 2023. Data collected between individual based field's interviews using semi-structured questionnaire. Most of the respondents were males and with age group of 40 to 60 years old. Most of the respondents were illiterate by educational status and Muslims by religion. Around 68.6% of respondents acquire their traditional knowledge from family and most traditional healers prepared remedies from plants 73 (71.6%). In our investigation, 71 plant species from five districts identified. Those plants used against 68 types of livestock diseases and to increase livestock outputs. Those plants botanically distributed across 43 families. Data from our study suggested that the highest number of plant species was found in Solanaceae and Fabaceae family with (13.95%) followed by Combretaceae and Asteraceae (9.30%). Majority of the medicinal plants reported were found from forest (42.25%) followed by both possible to cultivated or found in forest (35.21%), and Backyard (21.13%). Majorities of medicinal plant preparations was from root parts (25.35%), followed by leaf, seed (22.54%), and bark (8.45%). The current study has revealed that the natives in the districts have been heavily dependent on traditional veterinary medicine for the treatment of variety of livestock diseases. Thus, it should recommend that conservational activities of medicinal plants and governmental encouragements of traditional healers should be addressed.

## Keywords

Ethnoveterinary, Plant, Respondent, Medicinal Plant

## 1. Introduction

Livestock production is a major asset among resource-poor smallholder farmers by providing milk, meat, skin, manure and traction. However, their economic benefits remain low due to prevailing diseases, which are among the principal bottlenecks of livestock performance [11]. The majority of livestock raisers in Ethiopia are geographically far away from clinic stations; and some may not afford the fees for veterinary services [7]. Therefore, traditional ways of treatment appear

to be a viable alternative to tackle the problems, due to the inadequate animal health services in the different areas of country, and drug resistance development [6, 8]. Due to the longer period of practice, traditional medicine using plant-and animal-based remedies deeply integrated into the culture of Ethiopians. However, this medicinal practice poorly documented, resulting in the loss and underestimation of its value by the younger generation [1].

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**Received:** 1 November 2024; **Accepted:** 14 November 2024; **Published:** 13 December 2024



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Ethno-veterinary medicine is the application of traditional knowledge, theory, and practice to treat illnesses in livestock [15]. In addition, it comprises belief, and skills pertaining to healthcare and management of livestock [5, 10]. It estimated that the traditional remedies are sometimes the only source of therapeutics for nearly 80% of human population and 90% of livestock of which 95% are plant origin in pastoral area of Ethiopia. Ethno veterinary practice to animal health care is as old as the domestication of various livestock species. The ethno veterinary systems are an ecological unit and ethnic community-specific and therefore, the characteristics, sophistication, and intensity of these practices differ greatly among individuals, societies, and regions. However, they are facing the threat of rapid erosion because of rapid socio-economic, environmental, and technological changes [3].

World Health Organization (WHO) estimates that the majorities of the world's population rely mainly ethno botany and zoo therapy based medicine. Reports indicated that traditional medicine accounts for around 40% of all health care medicines in China while 65% of Indian population living in rural areas uses traditional medicines to meet their primary health care needs [2, 10]. Traditional medicine used in the diagnosis, prevention and elimination of physicals, mental or social imbalances, which passes from generation to generation, whether verbally or in writing [9].

Medicinal plants serve as potential sources of therapeutics for both humans and animals. But the major factor hindering the development of medicinal plant based industries in developing countries has been the lack of information on social and economic benefits which can be derived from the industrial utilization of those plants. As a result, the governments and entrepreneurs have not exploited their real potential [12].

The inadequate funding at the national level for the prevention and control of animal diseases adds to the burden, especially among pastoralists who live in the remote arid and semi-arid lowland parts of the country. Therefore, a reasonable solution would be to complement modern veterinary health care with traditional care. Ethno veterinary medicine often provides cheaper options than comparable western drugs, and the products are locally available and more easily accessible. In the face of these and other factors, there is increasing interest in the field of ethno veterinary research and development [14].

A large number of farmers rely on a range of ethno veterinary knowledge to keep their livestock healthy and have used for preventing and treating livestock ailments for several generations in Ethiopia [15]. Agriculture is the mainstay of Benishangul-Gumuz regional State but, livestock production is constrained by many factors and the return obtained from the sector is very low mainly due to killer diseases (animal Trypanosomosis) affecting all types of livestock especially cattle. Those knowledge systems mostly handed down orally from generation to generation and it may disappear because of rapid socioeconomic, environmental and technological changes. The collection of information about natural flora,

classification, management and use of plants by the people is very important since it is economical, culturally acceptable and ecologically sounds [7]. Therefore, documenting traditional medical knowledge is important to facilitate discovery of alternative medicine and new pharmaceuticals. Because ethno veterinary systems are ecological units and ethnic community-specific, the characteristics, sophistication, and intensity of these practices vary greatly across individuals, societies, and regions. Therefore, the objectives of the study were to document ethno veterinary medicinal plants and to identify different indigenous knowledge of local users in Assosa Zone.

## 2. Materials and Methods

### 2.1. Description of the Study Area

The study conducted from September 2022 to July 2023 in selected districts of Assosa zone of Benishangul Gumuz region. Assosa is the capital city of the region. Benishangul Gumuz Regional state is located in the northwestern part of Ethiopia, which suited between 09° 17'-12.06" N latitude and 34° 10'-37.4" E longitude. It shares common borders with the State of Amhara in the east, the Sudan in the northeast, and the State of Oromia in the south. The average annual temperature is 16-39 °C; its annual rainfall is 650-1,900 mm. The region covers a total area of 5,033, 592 hectare /50,380 Km<sup>2</sup> or 4.4 % total of the country, with altitude ranges from 580 – 3300 m.a.s.l with 75% low land/kola/ (below 1,500 m.a.s.l) [13]. The districts were purposively selected based on large number of livestock population and people way of life. The Kebele were also purposively selected because of high number of traditional plants knowledgeable indigenous people. Each participant was selected with a history of traditional medicinal practitioners.

### 2.2. Selection of Informants and Interviewing Process

Participants were traditional healers who volunteered and varied in age, gender, occupation, and educational level. One hundred and two informants (91 males) and 11 females purposefully selected from study districts with the support of Benishangul Gumuz Administration Office and respected Kebele level elders. Before the start of the interviews, informed consent was obtained from each informant who participated in this study after explaining the objective of the study and assuring them of the most responsible judicial use of the resulting information.

### 2.3. Data Collection

Individual interviews conducted with informants using semi-structured questionnaires written in English and translated into the local Rutenegna and Amharic languages. Each

informant's age, gender, level of education, occupation, and religion were gathered. The Ethnoveterinary medicinal plants' local/vernacular names, methods of preparation, diseases treated with traditional plants, route of administration, doses, location of plant found, type of plants, and parts of the medicinal plants recorded. Major animal diseases occur in the area, the symptom and clinical presentation of animal disease present and/ or the type of the disease recorded.

## 2.4. Plant Specimen Collection and Identification

Field trips conducted with local informants to collect and record reported medicinal plants specimens from wild and home gardens following standard procedures. Plant specimens collected by including vegetative parts, leaves, and/or seed parts that were suitable for taxonomic identification. The collected plant specimens were dried and pressed onto herbarium sheets made of cardboard or newspaper. The scientific name collected plant species identified by botanist.

## 2.5. Statistical Analysis

The data entered into SPSS version 20 and, summarized using descriptive statistical methods (frequency and percentage).

# 3. Result and Discussion

## 3.1. Socio-Demographic Profiles of Informants

One hundred two (102) respondents were participated in the study, with interview in five districts and 14 peasant associations. From (102) respondents participated in the study, 91(89.2%) were male (Table 1). Similar to this [4] from the interviewed males 90(93.8%) accounted the majority. The most traditional healers are males comparing to females. Concerning Age groups, 47(46.1%) of them were found at the age group level of 40 to 60 and most respondents 82(80.4%) were Muslim. Majority of the ethno veterinary practitioners respondents in Assosa zone were rural residents. Ethno-veterinary knowledge of the traditional healers mostly obtained from family members but some from religious institutions, which passed through generation with word of mouth. The majority of respondents used multiple plants to treat animal diseases. Educational status analysis showed that, 46(45.1%) of the respondents were illiterates, 15(14.7%) of them were able to write and read, while the remaining 25(24.5%), 7(6.9%) and 9(8.8%) were in elementary, high school, and degree or diploma respectively. In other study [15], educational status showed that, 47 (55.95%) of the respondents were illiterates, 17 (20.24%) of them were able to write and read. This minimum difference may be due to time variation, which is the number of intellectuality increase with

time.

**Table 1.** Demography of participants.

| Demographic factor         | Categories                                 | Number of respondents | Percentage |
|----------------------------|--|-----------------------|------------|
| Sex                        | Male                                       | 91                    | 89.2       |
|                            | Female                                     | 11                    | 10.8       |
|                            | Below 20                                   | 1                     | 1.0        |
| Age                        | 20 to 40                                   | 29                    | 28.4       |
|                            | 40 to 60                                   | 47                    | 46.1       |
|                            | Above 60                                   | 25                    | 24.5       |
| Religion                   | Orthodox                                   | 20                    | 19.6       |
|                            | Muslim                                     | 82                    | 80.4       |
|                            | Illiterate                                 | 46                    | 45.1       |
| Educational status         | Read and write                             | 15                    | 14.7       |
|                            | Elementary                                 | 25                    | 24.5       |
|                            | High school                                | 7                     | 6.9        |
| Animal health worker       | Degree and Diploma                         | 9                     | 8.8        |
|                            | Yes  | 8                     | 7.8        |
|                            | No   | 94                    | 92.2       |
| Source of knowledge        | Yes  | 93                    | 91.2       |
|                            | No   | 9                     | 8.8        |
|                            | Family                                     | 70                    | 68.6       |
| Source of ethno veterinary | Religion                                   | 9                     | 8.8        |
|                            | Learn from others                          | 5                     | 4.9        |
|                            | written material                           | 13                    | 12.7       |
| Others (trial and error)   | Others (trial and error)                   | 5                     | 4.9        |
|                            | Plant                                      | 73                    | 71.6       |
|                            | Non plant                                  | 9                     | 8.8        |
| Both plant and non-plant   | Both plant and non-plant                   | 6                     | 5.9        |
|                            | Others (physical activity on animals body) | 3                     | 2.9        |
|                            | Not give response                          | 11                    | 10.8       |

## 3.2. Plants Identified

In our investigation, 71 plant species from five districts identified. Those plants used against 68 types of livestock diseases and to increase livestock outputs. Those plants bo-

tanically distributed across 43 families. Data from our study suggested that the highest number of plant species was found

in Solanaceae and Fabaceae family with (13.95%) followed by Combretaceae and Asteraceae (9.30%).

**Table 2.** Table medicinal plants species, families, parts used, habit and indication.

| Plant local name | Language            | Family name    | Plant Scientific name                 | Plant location    | Part of plant used        | Indication / disease   |
|------------------|---------------------|----------------|---------------------------------------|-------------------|---------------------------|--|
| Awiet            | Amharic             | Solanaceae     | <i>Solanum nigrum</i>                 | Backyard          | Root                      | Newcastle  |
| Agara            | Rutanegna           | Combretaceae   | <i>Combretum Molle. R.Br.ex G.Don</i> | Forest            | Root                      | Trypanosomiasis  |
| Bebi             | Amharic / Rutanegna | Olacaceae      | <i>Zimenia americana</i>              | Forest            | Leaf                      | Trypanosomiasis  |
| Mengug           | Rutanegna           | Vitaceae       | <i>Ampelocissus schimperiana</i>      | Forest            | Root                      | Pneumonia  |
| Qombo            | Rutanegna           | Sterculiaceae  | <i>Sterculia Africana</i>             | Forest            | Root                      | Trypanosomiasis / Pneumonia / wound  |
| Zinigeble        | Amharic             | Zingiberaceae  | <i>Zingiber officinale</i>            | Backyard          | Root                      | Newcastle / Pnumenia   |
| Yejib shinkurt   | Amharic             | Amaryllidaceae | <i>Crinum bambusetum</i>              | Backyard          | Stem and underground stem | Diaharrea / Trypanosomiasis  |
| Qebricho         | Amharic             | Asteraceae     | <i>Eknops kebericho</i>               | Forest            | Root                      | Diaharrea / Black leg / Canavolism / trypanosomiasis   |
| Mimi             | Amharic             | Meliaceae      | <i>Azadirachta indica</i>             | Forest            | leaf                      | trypanosomiasis / Diaharrea / Poultry disease  |
| Aquden           | Rutanegna           | Rubiaceae      | <i>Sarcosephalus latifolius</i>       | Everywhere        | Root / leaf               | Canavolism / Black leg / Poultry disease / trypanosomiasis /bcolic in cattle / Gogobesa, Rabies / GIT diseases |
| Qundo berberie   | Amharic             | Anacardiaceae  | <i>Schinus molle* L.</i>              | Backyard          | Berry                     | Diaharrea  |
| Sheqete          | Rutanegna           | Polygalaceae   | <i>Scuridaca longepedunculata</i>     | Forest            | Root                      | Shoat diseases, Newcastle  |
| Mesel            | Rutanegna           | Fabaceae       | <i>Accacia species</i>                | Forest            | Berry and bark            | Brucellosis  |
| Tseta            | Rutanegna           | Dioscoreaceae  | <i>Dioscoria prehensilis</i>          | Forest            | Leaf                      | retained placenta  |
| Nichi shinkurte  | Amharic             | Alliaceae      | <i>Allium sativum L.</i>              | Everywhere        | Underground stem          | Trypanosomiasis, Pnumenia  |
| Tsira            | Rutanegna           | Moraceae       | <i>Ficus thonningii</i>               | Forest            | Root                      | Rabies   |
| Tikure Azimude   | Amharic             | Ranunculaceae  | <i>Nigella sativa L.</i>              | Backyard          | Seed and berry            | Trypanosomiasis, Poultry disease, Diaharrea, food appetite,  |
| Abeshi           | Amharic             | Fabaceae       | <i>Trigonellum foeniculum-graecum</i> | Backyard          | Seed and berry            | Trypanosomiasis, Cattle diseases   |
| Qey shinkurte    | Amharic             | Alliaceae      | <i>Allium cepa L</i>                  | Everywhere        | Berry                     | Poultry disease  |
| Tsetse furi      | Rutanegna           | Euphorbiaceae  | <i>Sapium elipticum(Krauss)Pax</i>    | Not give response | Root                      | Equine disease   |

| Plant local name  | Language            | Family name   | Plant Scientific name                      | Plant location | Part of plant used | Indication / disease  |
|-------------------|---------------------|---------------|--|----------------|--------------------|---|
| Tsetse mali       | Rutanegna           | Asteraceae    | Guizotia abyssinica (L.f) Cass             | Forest         | Root               | Rabies  |
| Aqanda            | Rutanegna           | Rubiaceae     | Gardenia Ternifolia schum. & Thonn.        | Forest         | Leaf               | Cattle diseases, Pnumenia   |
| Muze              | Amharic             | Musaceae      | Musa acuminata                             | Backyard       | Seed and berry     | Cattle diseases   |
| Kerkedie          | Amharic             | Malvaceae     | Hibiscus Corymbosus A.Rich                 | Forest         | Root               | Cattle diseases   |
| Gulo / shumeshugi | Amharic / rutanegna | Euphorbiaceae | Ricinus Communis L.                        | Everywhere     | Seed and berry     | Bloat   |
| Agongilo          | Rutanegna           | Burseraceae   | Boswellia Papyrifera (Del.) Haast          | Forest         | Root and berry     | Bloat   |
| Mitimita          | Amharic             | Solanaceae    | <i>Capsicum frutescens</i>                 | Backyard       | Berry and seed     | Poultry disease, Shout disease, couging, FMD, ORF   |
| Feto              | Amharic             | Brassicaceae  | Lepidium sativum L.                        | Backyard       | Berry or seed      | Pnumenia, diaharrea, Equine disease, Cattle diseases, Pasturolosis, Blackleg, couging, unknown diseases, Gogobesa, constipation |
| Demakasie         | Amharic             | Lamiaceae     | <i>Ocimum lamiifolium</i>                  | Everywhere     | Leaf               | Trypanosomiasis   |
| Lomi              | Amharic             | Rutaceae      | <i>Citrus limon</i>                        | Everywhere     | Berry              | unknown diseases  |
| Aregeisa          | Oromogna            | Aloaceae      | Aloe pubescens (Reynolds)                  | Everywhere     | Leaf               | Lung disease  |
| Birbera           | Amharic             | Fabaceae      | <i>Milletia ferruginea</i> (Hochst.) Baker | Everywhere     | all part           | Abriqe (equine diseases), poultry diseases  |
| Habhabe           | Amharic             | Cucurbitaceae | <i>Citrullus lanatus</i>                   | Everywhere     | Leaf               | Pnumenia  |
| Dinbilale         | Amharic             | Apiaceae      | <i>Coriandrum sativum</i>                  | Everywhere     | Berry and seed     | Trypanosmiasis, Lung disease, equine (Manzer), GIT diseases couging, unknown diseases   |
| Agam              | Amharic             | Apocynaceae   | <i>Carissa spinarum L.</i>                 | Everywhere     | Bark               | constipation  |
| Tena adam         | Amharic             | Rutaceae      | <i>Ruta chalepensis</i>                    | Backyard       | Leaf               | Newcastle, Brucellosis, Black leg, skin diseases Emaciation, skin diseases, gansh teeth   |
| Beqolo            | Amharic             | Poaceae       | <i>Zea mays</i>                            | Everywhere     | Berry and seed     | Pnumenia, diaharrea   |
| Teliba            | Amharic             | Linaceae      | <i>Linum usitatissimum*</i> L              | Everywhere     | Berry and seed     | retained placenta   |
| Lenquata          | Amharic             | Malvaceae     | <i>Grewia mollis</i>                       | Forest         | Bark               | retained placenta   |
| Nichi bahirzafe   | Amharic             | Myrtaceae     | <i>Eucalyptus globulus</i> Labill          | Everywhere     | Leaf               | Black leg   |
| Embuaye           | Amharic             | Solanaceae    | <i>Solanum incanum</i>                     | Forest         | Berry and seed     | Poultry disease, Trypanosmiasis, diaharrea, hornwound, couging, unknown diseases, Al-   |

| Plant local name  | Language  | Family name    | Plant Scientific name  | Plant location | Part of plant used        | Indication / disease  |
|-------------------|-----------|----------------|--|----------------|---------------------------|---|
|                   |           |                |  |                |                           | opacia, food appetite   |
| Buna              | Amharic   | Rubiaceae      | <i>Coffee arabica</i>  | Forest         | Berry and seed            | Trypanosmiasis, Wound, FMD  |
| Telenji           | Amharic   | Amaranthaceae  | <i>Achyranthes aspera</i> L.   | Forest         | Leaf                      | Bleeding  |
| Yequra arg        | Amharic   | Cucurbitaceae  | <i>Momordica foetida</i> Schumacher.                                       | Forest         | Root                      | Trypanosmiasis  |
| Moro              | Rutanegna | Asparagaceae   | <i>Asparagus Flagellaris</i> (kunth) Baker                                 | Backyard       | Root                      | Newcastle   |
| Yeselite zyeit    | Amharic   | Pedaliaceae    | <i>Sesamum indicum</i>   | Everywhere     | Beery and Seed            | Bloat   |
| Mengu             | Rutanegna |                | <i>Ampelocissus Schimperiana</i> (hochst.x.A.rich planchl.exA.Vitaceae)    | Everywhere     | Bark                      | Trypanosmiasis  |
| Qulqual           | Amharic   | Euphorbiaceae  | <i>Euphorbia ampliphylla</i> * Pax   | Forest         | Stem and underground stem | Trypanosmiasis  |
| Sorghohum         | Rutanegna | Poaceae        | <i>Sorghum Sorghum bicolor</i>   | Forest         | Berry and seed            | diaharrhea  |
| Qeye              | Rutanegna | Combretaceae   | <i>Anogeissus leiocarpa</i> (A.DC)Guill.Bperr                              | Backyard       | Berry and Bark            | diaharrhea, GIT diseases, Goat disease, Equine disease, Colic, respiratory diseasae |
| Hornotse          | Rutanegna | Tiliaceae      | <i>Grewia velutina</i>   | Everywhere     | Bark                      | Trypanosmiasis  |
| Weyira            | Amharic   | Oleaceae       | <i>Olea capensis</i> L.Subsp. macrocarpa (C.H. Wright) I. Verd. (Oleaceae) | Forest         | Root                      | Emaciation, all disease   |
| Qutse             | Rutanegna | Asteraceae     | <i>Saussuria lappa</i>   | Forest         | Root and berry            | Rabies, couging   |
| Moringa           | Amharic   | Moringaceae    | <i>Moringa stenopetala</i>   | Backyard       | Leaf                      | all disease   |
| Gumero            | Amharic   | Capparaceae    | <i>Capparis tomentosa</i>  | Forest         | Root                      | gansh teeth   |
| Washenit          | Amharic   | Asteraceae     | <i>Solanecio</i> sp.   | Backyard       | Bark                      | gansh teeth   |
| Gezaiwa           | Amharic   | Solanaceae     | <i>Withania somnifera</i> (L.) Dunal (Solanaceae)                          | Backyard       | Root                      | wound, gansh teeth  |
| Qulqualcho        | Amharic   | Cactaceae      | <i>Opuntia ficus-indica</i> (L.) Mille                                     | Backyard       | Leaf                      | Warts   |
| Ye Habesha gomene | Amharic   | Brassicaceae   | <i>Brassica carinata</i> (A.) Braun  | Everywhere     | Berry and seed            | FMD   |
| Sinapheche        | Amharic   | Brassicaceae   | <i>Brassica carinata</i> A.Br  | Everywhere     | Berry and seed            | Equine disease, couging   |
| Ashure            | Rutanegna | Combretaceae   | <i>Terminalia laxiflora</i> Engl.B.Diales                                  | Everywhere     | Root                      | Trypanosmiasis  |
| Lebiremegu        | Rutanegna | Fabaceae       | <i>Vigna menbranacea</i> . A. Rich   | Everywhere     | Root                      | Lung disease  |
| Tsaba             | Rutanegna | Fabaceae       | <i>Dalbergia boehmii</i> (L.Del)   | Forest         | Bark                      | couging, poultry disease  |
| Bambee            | Amharic   | Convolvulaceae | <i>Ipomoea batatas</i> L.  | Everywhere     | all part                  | wound   |



| Plant local name | Language  | Family name  | Plant Scientific name              | Plant location | Part of plant used   | Indication / disease  |
|------------------|-----------|--------------|------------------------------------|----------------|----------------------|---|
| Agaro            | Rutanegna | Celastraceae | Maytenus senegalensis (Lam.).Exell | Forest         | Root and Leaf / Bark | Trypanosmiasis, Bloat and Goat diseases                                   |
| Enquaye          | Amharic   | Solanaceae   | Solanum marginatum L.F.            | Everywhere     | Berry and seed       | Newcastle, photophobia, Canavolism, Dafent (eye diseases),                |
| Qeha             | Rutanegna | Balanitaceae | Balanites Aegyptiaca (L.Del)       | Everywhere     | Leaf                 | couging   |
| Gushel           | Rutanegna | Combretaceae | Combretum collinum fresen          | Forest         | Leaf                 | Trypanosmiasis  |
| Giendher         | Rutanegna | Fabaceae     | Albizia mamacophylla (A.Rich).walp | Forest         | all part             | increase milk   |
| Aqulqa           | Rutanegna | Bignoniaceae | Stereospermum kunthianum           | Forest         | Leaf                 | Trypanosmiasis, diarrhea, Reih or dyspnea, Goat diseases, Equine disease, |
| Tinbaho          | Amharic   | Solanaceae   | Nicotiana tabacum                  | Everywhere     | Leaf                 | myasis, Ectoparasite, wound   |

### 3.3. Parts Used and Source of Medicinal Plants

Part of the plant used for medicinal value varies according to the type of plant they used. Most of the plant administer to diseased animal orally but use of nose, smocking, ointment, pour on, drop and spray also used according to type of diseases and nature of plant material. Even though different parts of plants reported to use for remedy preparation by the respondents, a majority of remedy preparations of traditional medicine found to from root parts (25.35%), followed by leaf, seed (22.54%), and bark (8.45%). But the rest parts of the plants like Stem and underground stem, Berry, root and leaf, berry and bark, all part of the plant, root and berry, leaf and berry, root and bark, have been accounted the rest. Similar to this study [11], root is the most frequent part of plants used by the respondent's.

**Table 3.** Frequency of Part of the plant use for treatment.

| Part of the plant         | Percentage | Percent |
|---------------------------|------------|---------|
| Root                      | 18         | 25.35%  |
| Leaf                      | 16         | 22.54%  |
| Stem and underground stem | 2          | 2.82%   |
| Bark                      | 6          | 8.45%   |

| Part of the plant     | Percentage | Percent |
|-----------------------|------------|---------|
| Root and Leaf         | 2          | 2.82%   |
| Berry and Bark        | 2          | 2.82%   |
| All part of the plant | 3          | 4.22%   |
| Root and Berry        | 2          | 2.82%   |
| Seed                  | 16         | 22.54%  |
| Berry                 | 3          | 4.22%   |
| Underground stem      | 1          | 1.41%   |
| Total                 | 71         | 100%    |

Traditional veterinary use medicines were reported to be administered through oral, nasal, topical, smoking, with ear, inhalation, pour on, surgical, drop and spray, however among those routes oral application was the best represented routes of administration as (78.6%) of respondents revealed, followed by pour on (22.9%), respectively. Similar to this study, [4] oral rout is the most frequently root of administration followed by pour on methods.

### 3.4. Plant Location

Majority of the medicinal plants reported found from forest source (42.25%) and others were either cultivated or found in forest (35.21%), or obtained from Backyard (21.13%).

**Table 4.** Plant location.

| Location                 | Percentage of plants | Percent (%) |
|--------------------------|----------------------|-------------|
| Backyard                 | 15                   | 21.13%      |
| Both backyard and forest | 25                   | 35.21%      |
| Forest                   | 30                   | 42.25%      |
| Not give response        | 1                    | 1.41%       |
| Total                    | 71                   | 100%        |

## 4. Conclusion and Recommendation

The current study has revealed that the people of the Assosa zone have sound traditional veterinary medicines knowledge and practices for preventing, controlling, and the treatment of variety of livestock diseases. The traditional knowledge always provides a baseline for further phytochemical and pharmacological investigation. Conservational activities of medicinal plants and governmental encouragements of traditional healers should conduct.

## Abbreviations

|         |  |
|---------|--|
| m.a.s.l | Mean Above Sea Level                   |
| SPSS    | Statistical Package for Social Science |
| WHO     | World Health Organization              |

## Author Contributions

Betelihem Yirdaw is the sole author. The author read and approved the final manuscript.

## Conflicts of Interest

The author declares no conflicts of interest.

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