

Ethnobotanical survey on plants reputed as aphrodisiacs in Lubumbashi and its surroundings

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ABSTRACT

Introduction

Despite the scarcity of studies on plant-based aphrodisiacs in this region, this research aims to address the gap by documenting local knowledge. The study sought to identify plants reputed to have aphrodisiac properties in Lubumbashi and its surroundings and to describe their traditional uses.

Purpose

To conduct an ethnobotanical investigation of plants reputed as aphrodisiacs in Lubumbashi and its surrounding areas.

Methods

This descriptive ethnobotanical study employed a semi-structured questionnaire administered to 35 key informants. The survey identified 52 plant species reputed to have aphrodisiac properties. The collected data underwent descriptive analysis to determine the most frequently cited species and their modes of use.

Results

We documented 52 plant species belonging to 31 families, with Fabaceae being the most represented (13.5%). Decoction (62.5%) was the predominant preparation method, and oral administration (74.8%) the most common route. The underground parts of plants were most frequently used (45.9%), particularly roots (40.7%). Among the 35 respondents (54.3% men, mean age ≈ 50 years), sexual weakness (39.4%) and low libido (26.8%) were the most frequently reported conditions treated.

Conclusion

These findings provide a valuable database on aphrodisiac plants in the region, highlight Fabaceae taxa for phytochemical screening, and support the integration of traditional remedies into sexual health research.

INTRODUCTION

For centuries, humans have used various plants reputed to be aphrodisiacs to enhance sexual performance and stimulate desire. These traditional remedies remain important in many cultures for managing sexual dysfunctions. Sexual dysfunction (SD) encompasses difficulties such as erectile dysfunction, reduced libido, and ejaculation problems (Leslie & Sooriyaamorthy, 2024; Ventegodt & Merrick, 2008). Given the rich biodiversity and traditional botanical knowledge, exploring medicinal plants with aphrodisiac properties offers promising avenues for therapeutic development.

The prevalence of erectile dysfunction, regardless of age and severity, is estimated at 31.5%. For other sexual disorders such as ejaculatory problems and decreased libido, prevalence rates of 20.2% and 11.4%, respectively, have been reported (Baka et al., 2017). Although no specific regional data are currently available for Lubumbashi or the surrounding areas, these figures have been extrapolated from studies conducted in comparable populations, providing a useful reference point in the absence of localized epidemiological data.

In most rural and urban African areas, it is evident that the majority of the population turns to traditional medicine for care, not only for sexual dysfunction but also for other pathologies (Ngoy, 2013; Bashige et al., 2017; Mulamba, 2017; Bashige et al., 2018; Many, 2020; Kalunga, 2021; Mbuyi, 2022). This highlights the importance of using plant-based remedies, as the plant kingdom provides an almost inexhaustible and diverse source of natural substances used by traditional medicine and biomedicine to treat most known diseases, including sexual dysfunction. The natural substances found in plant species represent an important source of active ingredients (Memvanga et al., 2015; Newman & Cragg, 2016).

In African traditions, and specifically in Congolese culture, several plants are used to treat sexual dysfunction or to maintain a healthy libido. It has been demonstrated in some biological studies that plants reputed as aphrodisiacs in traditional medicine have a real aphrodisiac effect *in vivo* on rats (Békro et al., 2007; Ondele et al., 2015). Medicinal plants contain hundreds or even thousands of active compounds essential for treating various diseases (Morel, 2020;

Chabrier, 2010; Hostettmann et al., 2002). Some studies have shown that the aphrodisiac activity of certain plant species is due to the presence of active ingredients, notably flavonoids (Ondele et al., 2015) and alkaloids (Chaaib et al., 2003; Adesina, 2005; Yao-Kouassi et al., 2015).

In Lubumbashi, there is a significant gap due to the lack of a comprehensive and exhaustive database on local aphrodisiac plants. Although a few previous studies have addressed this topic (Dikala et al., 2024; Bashige et al., 2020), they remain limited considering the abundance and diversity of plants traditionally used. This study therefore aimed to fill this gap by cataloguing the aphrodisiac plants used in the Lubumbashi region and documenting their modes of use.

METHODS

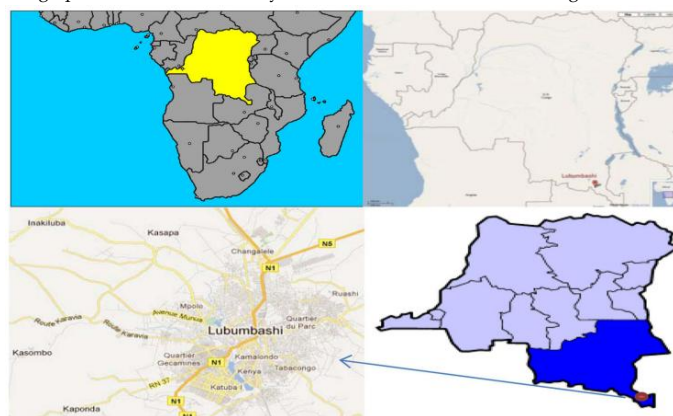
Study Design

This was a descriptive and cross-sectional ethnobotanical study based on interviews using a semi-structured questionnaire.

Study Area

The ethnobotanical surveys were conducted in the city of Lubumbashi and its surroundings, the capital of the Haut-Katanga Province. It is situated at an altitude of 1,230 metres and experiences a tropical climate with two seasons: a dry season from April to October and a rainy season from November to March, with an average annual rainfall of 1,228 mm. The average temperature in the city is 20 °C. Lubumbashi has several watercourses, including the Kafubu, Karavia, Lubumbashi, Lwano, Navyundu, and Rwashi rivers (Mujinga et al., 2009).

Figure 1:
Geographical situation of the city of Lubumbashi and its surroundings



Participants

The study involved 35 resource persons selected for their recognised knowledge of medicinal plants and traditional health practices. Inclusion criteria included being over 18 years of age, residing in Lubumbashi or its surroundings, and having practical experience or oral knowledge related to the use of aphrodisiac plants. Participants were recruited through purposive sampling, targeting traditional healers and elders known for their ethnobotanical expertise. Before data collection, the study objectives were explained to each participant, and their free and informed consent was obtained.

Data Collection

The ethnobotanical knowledge and practices explored in this study are influenced by factors such as culture, place of residence, ethnicity, religion, age, and gender of the informants (Cheikhyoussef, 2011). These considerations were taken into account when designing a semi-structured questionnaire, which is available upon request and served as a guide for data collection from 35 resource persons between April 10 and October 30, 2019. Interviews were conducted in the main local languages spoken by the participants, namely Swahili, French, and Tshiluba.

The survey aimed to collect detailed information on the vernacular names of plants, parts used, treated pathologies—including sexual dysfunctions—preparation and administration methods, dosages and frequency of use, harvesting practices (location and season), storage methods, as well as other reported uses for each plant. Participants were selected based on their recognised expertise and experience in traditional medicine.

The sample size of 35 was determined according to the principle of data saturation, a common standard in ethnobotanical research, which corresponds to the point at which additional interviews no longer yield significant new information. This approach ensures comprehensive knowledge collection while optimising available resources.

Plant Identification

The scientific identification of plant species mentioned by participants was carried out by botanists from the INERA Kipopo station and the Faculty of Agricultural Sciences, using the vernacular names and plant specimens collected.

Voucher specimen numbers were assigned to each identified plant to ensure traceability and validation.

Data Analysis

The collected data were entered and processed using Microsoft Excel 2016. Descriptive statistics (frequencies and percentages) were calculated to determine the most cited species, the plant parts most commonly used, as well as the most frequent preparation and administration methods. No inferential statistical analysis was performed.

RESULTS

Participant Characteristics

A total of 35 resource persons participated in the survey. Their ages ranged from 32 to 75 years, with a mean age of 50 years. Three main age groups emerged: 10 participants aged 31–41 years (28.6%), 9 aged 42–52 years (25.7%), and 10 aged 53–63 years (28.6%), together accounting for 29 participants (82.9%) of the sample.

Gender distribution revealed a predominance of male healers: 19 men (54.3%) and 16 women (45.7%), yielding a male-to-female ratio of 1.2:1. In terms of knowledge transmission, 16 participants (45.7%) reported acquiring healing knowledge through apprenticeship within the family, while 13 (37.1%) inherited it directly.

Regarding ethnicity, the most represented group was the Luba from Katanga with 11 participants (31.4%), followed by the Luba from Kasai with 9 (25.7%). Other ethnic groups included the Hemba with 4 participants (11.4%), the Bemba with 3 (8.6%), and the Tabwa, Holoholo, Kalanga, Kongo, Zela, and Rund with 1 participant each (2.9%).

Language proficiency showed that 34 participants (97%) spoke Swahili. Other reported languages included Hemba (5 participants, 14.3%) and French, Bemba, Kikongo, and Tshiluba (3 participants each, 8.6%).

Although traditional healing was the main occupation of all participants, many were also involved in secondary activities such as farming, commerce, teaching, or health-related services.

Diversity of Aphrodisiac Plants

The study identified 52 plant species reputed for aphrodisiac properties, belonging to 31 botanical families.

The Fabaceae family was the most represented, accounting for 7 species out of 52 (13.5%). Vernacular names were recorded, and identification was confirmed by botanists from INERA Kipopo and the Faculty of Agricultural

Sciences. Voucher specimens were collected to ensure botanical traceability.

Table 1:
Knowledge of Other Names of the Collected Species

| No. | Scientific name | Family | Vernacular name (linguistic group) | Ref. |
|-----|---|------------------|--|----------------------------------|
| 1 | <i>Abrus precatorius</i> L. | Fabaceae | Buiso bwange, buyiso buange (Lamba); Buhiti (Hemba) | T1, T6, T11 |
| 2 | <i>Acalypha senensis</i> Oliv. | Euphorbiaceae | Kaboko pakanua (Sanga, Lamba) | T2, T6, T12 |
| 3 | <i>Albizia versicolor</i> var. | Fabaceae | Musasa, musasse ngoma (Bemba, Lala, Lamba); Ibamba ngoma (Hemba) | T3, T14, T15 |
| 4 | <i>Alchemilla vulgaris</i> L. | Rosaceae | Dikasa diantambwe (Tshiluba) | T4, T5, T11 |
| 5 | <i>Allium sativum</i> var. | Amaryllidaceae | Ail (French); Sabolo (Sanga); Matungulu (Swahili); Itungulu (Hemba) | T5, T6 |
| 6 | <i>Anisophyllea boehnii</i> | Anisophylleaceae | Fungo (Sanga); Lufunga (Tabwa); Mfongo (Swahili); Mufungo (Bemba) | T9, T3, T7 |
| 7 | <i>Antidesma venosum</i> E. Mey. ex Tul. | Phyllanthaceae | Kifubia (Luba); Ifubia (Hemba); Kifuvia (Bemba); Musambafwa (Lamba) | T9, T3, T7 |
| 8 | <i>Apium graveolens</i> L. | Apiaceae | Cèleri (French) | T8, T7, T16 |
| 9 | <i>Asparagus africanus</i> L. | Asparagaceae | Lukuta nkuadi (Lamba); Atata ngwali (Hemba) | T1, T9, T15 |
| 10 | <i>Bobgunia madagascariensis</i> Desv. | Lamiaceae | Munienze (Luba); Ndale, Mpampi (Tshiluba) | T1, T10, T14 |
| 11 | <i>Camellia sinensis</i> (L.) Kuntze | Theaceae | Tshiyai (Luba) | T9, T10, T16 |
| 12 | <i>Celtis mildbraedii</i> Engl. | Cannabaceae | Mukomakoma (Tshiluba); Mokolongo, Mokalungo (Swahili) | T10, T12, T3 |
| 13 | <i>Combretum collinum</i> Fresen. | Combretaceae | Bungushi (Swahili) | T10, T3 |
| 14 | <i>Croton mubago</i> Müll. Arg. | Euphorbiaceae | Kabujimutshi (Tshiluba) | T1, T12, T14 |
| 15 | <i>Croton sylvaticus</i> | Euphorbiaceae | Six heures à six heures (French); Mutufita (Swahili) | T1, T6, T16 |
| 16 | <i>Dalbergia boehmii</i> Taub. | Euphorbiaceae | Katembwe mwiji, Katembo mutshi (Tshiluba); Katembo (Zela, Sanga) | T1, T15 |
| 17 | <i>Diospyros virginiana</i> L. | Ebenaceae | Kabimbo (Luba); Kapal mazeu (Rund) | T10, T6, T13 |
| 18 | <i>Diospyros batocana</i> Hiern | Ebenaceae | Mutufita (Swahili); Kabimbo (Luba) | T8, T9, T13 |
| 19 | <i>Diplorhynchus condylocarpon</i> (Müll. Arg.) Pichon. | Apocynaceae | Mtogo, Mwenge (Swahili, Sanga); Mubudi mbuli (Luba, Hemba) | T1, T7, T19 |
| 20 | <i>Dracaena dragoonier</i> L. | Asparagaceae | Mugonda (Swahili) | T1, T17, T22 |
| 21 | <i>Erythrophleum suaveolens</i> (Guill. & Perr.) Brenan | Fabaceae | Tshipapa; Bois rouge (French); Mwavi dume; Mbaraka mkuu; Mkelekele (Swahili) | T6, T1, T2, T22 |
| 22 | <i>Erythrina abyssinica</i> Lam. ex DC. | Fabaceae | Kisungwa; Ikbasukwa (Bemba); Isungwa (Hemba); Kitshipitshipi (Sanga) | T6, T13, T22, T10, T14, T11, T12 |
| 23 | <i>Ficus glumosa</i> Delile | Moraceae | Mushelele (Lamba); Tshikuyi (Tshiluba); Mukunyu (Swahili); Mitondo miji (Luba) | T22 |
| 24 | <i>Schrebera trichoclada</i> Welw. | Oleaceae | Katubo na kabaya (Swahili) | T1, T5, T13 |
| 25 | <i>Garcinia kola</i> Heckel | Clusiaceae | Ngadiadia; Noix de kola (French) | T13, T22 |
| 26 | <i>Gardenia jovis-tonantis</i> (Welw.) Hiern. | Rubiaceae | Nkolueba; Ekore; Kolweba (Zela) | T34, T1, T20 |
| 27 | <i>Gladiolus dalenii</i> Van Geel | Fabaceae | Kabolé lubamba (Swahili) | T35, T22 |
| 28 | <i>Heinsia crinita</i> (Afzel.) G. Taylor | Rubiaceae | Kita mata (Lingala) | T1, T11 |
| 29 | <i>Hibiscus rosa-sinensis</i> L. | Malvaceae | Busa (Tshiluba); Mulenda (Swahili) | T12, T21 |
| 30 | <i>Hymenocardia acida</i> Tul. | Phyllanthaceae | Kampe mutshi (Luba) | T17, T1, T31 |
| 31 | <i>Imperata cylindrica</i> L. Raeusch. | Poaceae | Nsona (Tshiluba); Lubamba ou Mabamba (Hemba) | T34, T22 |
| 32 | <i>Indigofera capitata</i> Kotschy | Lamiaceae | Onkaï (Téké); Diamba dia makanga (Soundi) | T13, T5 |
| 33 | <i>Kigelia africana</i> Fenzl. | Bignoniaceae | Kivungue (Swahili) | T23, T6, T7 |
| 34 | <i>Mirabilis jalapa</i> L. | Nyctaginaceae | Belle de nuit; Kalongu (Tshiluba) | T15, T1, T2 |
| 35 | <i>Moringa oleifera</i> Lam. | Moringaceae | Moringa (French) | T5, T7 |
| 36 | <i>Ochna serrulata</i> (Hochst.) Walp. | Ochnaceae | Musengo sengo; Muvula lusengo (Tabwa) | T2, T12, T25, T11, T1 |
| 37 | <i>Ocimum grandiflorum</i> Lam. | Lamiaceae | Kafupa (Swahili) | T15, T8 |
| 38 | <i>Ophioglossum reticulatum</i> L. | Ophioglossaceae | Fougère (French) | T6, T3, T9 |
| 39 | <i>Parinari moballa</i> or <i>Parinari curatellifolia</i> Planch. ex Benth. | Chrysobalanaceae | Mupundu (Hemba, Luba, Sanga); Mupundupundu kifulumutshi (Luba) | T26, T1, T2 |

| No. | Scientific name | Family | Vernacular name (linguistic group) | Ref. |
|-----|--|----------------|--|--------------|
| 40 | <i>Phyllanthus muellerianus</i> (Kuntze) Exell | Phyllanthaceae | Ludimba, Lundimba, Kajimbajimba Lujimba (Luba); Lulembalemba, Mulembalemba (Hemba, Sanga, Kaonde); Mpetwa lupe (Bemba) | T29, T3, T10 |
| 41 | <i>Piliostigma thonningii</i> (Schum.) Milne-Redh. | Fabaceae | Kifumbe (Swahili, Hemba); Ifumbe (Hemba); Kikitshi (Tshiluba) | T28, T1, T30 |
| 42 | <i>Pterocarpus angolensis</i> DC. | Fabaceae | Mukundambazu (Tabwa); Mulombwa, Muyanga (Bemba) | T5, T30 |
| 43 | <i>Rauvolfia serpentina</i> L. | Apocynaceae | Mutunu; Kilimbanika (Hemba); Kitomba; Pandanganga (Luba) | T5, T33 |
| 44 | <i>Solanum nigrum</i> L. | Solanaceae | Ntutunia (Lamba, Lala) | T15, T5, T1 |
| 45 | <i>Spathodea campanulata</i> P. Beauv. | Bignoniaceae | Tulipier du Gabon; Bâton du sorcier; Flamme de la forêt (French) | T11, T17 |
| 46 | <i>Strychnos cocculoides</i> Lam. | Loganiaceae | Bukoke (Hemba); Kisongole (Swahili); Mukoke (Bemba) | T30, T32, T4 |
| 47 | <i>Strychnos spinosa</i> Lam. | Loganiaceae | Mukoke (Bemba); Bukoke (Hemba) | T4, T11 |
| 48 | <i>Strychnos stuhlmannii</i> Gilg. | Loganiaceae | Mubanga kyulu (Swahili); Mukoke (Bemba); Bukoke (Hemba) | T31, T1, T5 |
| 49 | <i>Syzygium aromaticum</i> L. | Myrtaceae | Musafua ou Musafwa (Bemba) | T32, T10, T5 |
| 50 | <i>Terminalia mollis</i> M. A. Lawson | Combretaceae | Kibobo ou Tshibangu mutshi (Tshiluba); Kianga, Ianga (Hemba) | T11, T33 |
| 51 | <i>Zingiber officinale</i> Roscoe | Zingiberaceae | Gingembre (French) | T12, T2, T14 |
| 52 | <i>Ziziphus abyssinica</i> Hochst. ex A. Riche | Rhamnaceae | Sula (Bemba); Lunkole; Kankununu; Mukobakoba (Tshiluba) | T33, T6, T15 |

Table 1 presents the 52 plant species reported for their aphrodisiac uses, distributed among 31 botanical families. Each species is listed with its scientific name, vernacular name as used by local informants, and corresponding botanical family.

Summary of Species Distribution

The 52 documented aphrodisiac plant species are distributed across 31 botanical families. The Fabaceae family was the most represented with 7 species (13.5%), followed by Euphorbiaceae (4 species; 7.7%), and Phyllanthaceae, Lamiaceae, and Loganiaceae (3 species each; 5.8%). Several families such as Asparagaceae, Combretaceae, Ebenaceae, Apocynaceae, Rubiaceae, and

Bignoniaceae were represented by two species each (3.9%), while the remaining families were represented by a single species (1.9%).

Collected Ethnobotanical Information

Table 2 lists the therapeutic procedures provided by resource persons. It details the plant parts used, the pathologies or symptoms treated by each species, and the methods of preparation and administration of medicinal recipes. This table summarises ethnobotanical data specifically related to sexual disorders, indicating the type of sexual disorder treated, the method of preparation of herbal remedies, and the most commonly used administration route, as reported by the traditional healers interviewed

Table 2:
Ethnobotanical Data of Collected Species for Sexual Dysfunction

| No. | Scientific name | Part Used | Symptoms/Indications | Preparation & Administration | Ref. |
|-----|--|-----------|---|---|--------------|
| 1 | <i>Abrus precatorius</i> L. | S | Low libido and fatigue; aphrodisiac | Decoction for 10 min of 5 handfuls in a glass of milk; drink before intercourse | T1, T6, T11 |
| 2 | <i>Acalypha senensis</i> Oliv. | L | Sexual weakness; aphrodisiac | Decoction for 30 min of 2 handfuls per liter; drink ½ glass 3×/day for 3 days | T2, T6, T12 |
| 3 | <i>Albizia versicolor</i> var. | St | Improvement of sexuality; aphrodisiac | Decoction for 30 min of 2 handfuls in 1 glass water; drink 1 glass before intercourse | T3, T14, T15 |
| 4 | <i>Alchemilla vulgaris</i> L. | R | Premature ejaculation; aphrodisiac | Maceration 24 h of 7 handfuls in 5 glasses water; drink 1 glass/day for 7 days | T4, T5, T11 |
| 5 | <i>Allium sativum</i> var. | P | Sexual weakness; aphrodisiac | Decoction 20 min of 4 handfuls in 1 glass water; drink 1 glass before intercourse | T4, T6, T10 |
| 6 | <i>Anisophyllea boehnii</i> | L | Lack of orgasm; warming effect; aphrodisiac | Infusion of 1 handful in ½ glass; drink ½ glass/day for 3–4 days | T9, T3, T7 |
| 7 | <i>Antidesma venosum</i> E. Mey. ex Tul. | R | Absence of libido; aphrodisiac | Decoction of 4 handfuls in 7.5 glasses water; drink 1 glass before intercourse | T9, T3, T7 |

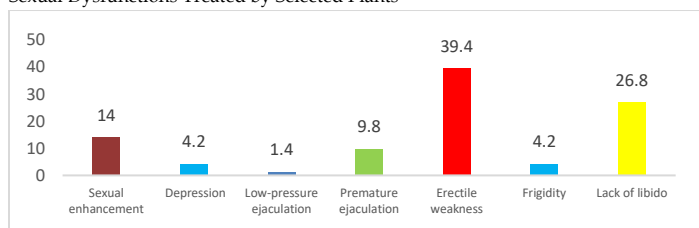
| No. | Scientific name | Part Used | Symptoms/Indications | Preparation & Administration | Ref. |
|-----|---|-----------|---|--|-----------------------|
| 8 | <i>Apium graveolens</i> L. | R | Lack of orgasm; aphrodisiac | Maceration 4 h of 1 handful in 0.5 glass water; drink once/day before intercourse | T8, T7, T16 |
| 9 | <i>Asparagus africanus</i> L. | R | Improve sexual performance; aphrodisiac | Decoction 20 min of 4 handfuls per glass; drink 1 glass before intercourse | T1, T9, T15 |
| 10 | <i>Bobgunia madagascariensis</i> Desv. | R | Sexual disorders; improve sexual performance; aphrodisiac | Decoction or maceration of 8 handfuls in 10 glasses water; drink 1 glass/day | T1, T10, T14 |
| 11 | <i>Camellia sinensis</i> (L.) Kuntze | L | Sexual weakness in men; maintain erection; aphrodisiac | Decoction 5 min or maceration 8 h of 4 handfuls in 1 glass water; drink 2×/day for 2 days | T9, T10, T16 |
| 12 | <i>Celtis mildbraedii</i> Engl. | Wp | Sexual weakness, low libido, premature ejaculation; aphrodisiac | Maceration of 3 handfuls in 1 glass water; drink 2×/day | T10, T12, T3 |
| 13 | <i>Combretum collinum</i> Fresen. | L | Sexual weakness; aphrodisiac | Infusion of 4 handfuls in 1 glass water; drink before intercourse | T10, T3 |
| 14 | <i>Croton mubago</i> Müll. Arg. | St | Sexual enhancement; aphrodisiac | Infusion of 4 handfuls in 1.5 glasses water; drink 1 glass before intercourse | T1, T12, T14 |
| 15 | <i>Croton sylvaticus</i> | R | Sexual weakness; aphrodisiac | Decoction 30 min of 6 handfuls in 3 glasses water; drink 1 glass before intercourse | T1, T6, T16 |
| 16 | <i>Dalbergia boehmii</i> Taub. | L/R | Sexual weakness; aphrodisiac | Decoction 5 min of 1 handful in 0.5 glass water; drink 30 min before intercourse | T1, T15 |
| 17 | <i>Diospyros virginiana</i> L. | R | Absence of libido; aphrodisiac | Decoction of 4 handfuls in 1 glass water; drink 2–3 glasses/day | T10, T6, T13 |
| 18 | <i>Diospyros batocana</i> Hiern | St | Sexual weakness; increase virility; aphrodisiac | Decoction of 5 handfuls in 10 glasses water; drink 1 glass twice before intercourse | T8, T9, T13 |
| 19 | <i>Diplorhynchus condylocarpon</i> (Müll. Arg.) Pichon | L | Sexual weakness; aphrodisiac | Maceration 5 min of 1 handful in 1 glass water; drink once/day for 4 days | T1, T7, T19 |
| 20 | <i>Dracaena dragonnier</i> L. | R | Sexual weakness and low libido in men | Decoction 30 min of 4 handfuls in 5 glasses water; drink ½ glass 2×/day for 4 days | T1, T17, T22 |
| 21 | <i>Erythrophleum suaveolens</i> (Guill. & Perr.) Brenan | St | Aphrodisiac; premature ejaculation | Decoction 15 min or maceration 2 h of 3 handfuls in 1.5 glasses water; drink ½ glass 2 h before intercourse | T6, T1, T2, T22 |
| 22 | <i>Erythrina abyssinica</i> Lam. ex DC. | St | Sexual weakness; aphrodisiac | Decoction 5 min of 1 handful in 0.5 glass water; drink before intercourse | T6, T13, T22 |
| 23 | <i>Ficus glumosa</i> Delile | L/R | Weak ejaculation; lack of pressure; libido; aphrodisiac | Decoction 30 min of 4 handfuls in 2.5 glasses water; drink ½ glass before and ½ glass after intercourse | T13, T22 |
| 24 | <i>Garcinia kola</i> Heckel | S | Sexual weakness; aphrodisiac | Decoction 10 min of 7 handfuls in 1 glass water; drink before intercourse | T34, T1, T20 |
| 25 | <i>Gardenia jovis-tonantis</i> (Welw.) Hiern | St | Sexual weakness; aphrodisiac | Decoction 30 min of 8 handfuls in 10 glasses water; drink 2 glasses before intercourse | T35, T22 |
| 26 | <i>Gladiolus dalenii</i> Van Geel | B | Improve sexuality; sexual panic; aphrodisiac | Maceration of 4 handfuls in 3 glasses water; anal purgation; chew half a bulb with salt then drink 1 glass water | T1, T11 |
| 27 | <i>Heinsia crinite</i> (Afzel.) G. Taylor | St | Sexual weakness; enhance performance; aphrodisiac | Chew three stems (~4g); maceration of some pieces in a drink (~4g) | T12, T21 |
| 28 | <i>Hibiscus rosa sinensis</i> L. | Fl | Sexual fatigue; aphrodisiac | Decoction 5 min of 3 handfuls in 1 glass water; drink before intercourse; chew three flowers (~6g) | T17, T1, T31 |
| 29 | <i>Hymenocardia acida</i> Tul | R | Sexual weakness; improve capacity; aphrodisiac | Decoction 20 min of 3 handfuls in 2.5 glasses water; drink ½ glass 3×/day for 7 days | T34, T22 |
| 30 | <i>Imperata cylindrica</i> L. Raeusch. | Rh | Sexual weakness and low libido; aphrodisiac | Maceration of 1 handful in KUNGFU drink; drink 2×/day for 2 days | T13, T5 |
| 31 | <i>Indigofera capitata</i> Kotschy | L/R | Sexual weakness and low libido; aphrodisiac | Decoction 30 min of 4 handfuls in 7.5 glasses water; drink ½ glass 2×/day for 4 days | T23, T6, T7 |
| 32 | <i>Kigelia africana</i> Fenzl | St | Sexual weakness; aphrodisiac | Decoction 30 min of 7 handfuls in 3 glasses water; drink 1 glass before intercourse | T15, T1, T2 |
| 33 | <i>Mirabilis jalapa</i> L. | R | Improve sexuality; against depression; aphrodisiac | Decoction 5 min of 4 handfuls in 1 glass water; drink with salt before intercourse | T24, T5, T7 |
| 34 | <i>Moringa oleifera</i> Lam | L | Sexual desire; enhance performance; aphrodisiac | Decoction 30 min or maceration 24 h of 3 handfuls in 8 glasses water; drink 1 glass 2×/day | T2, T12, T25, T11, T1 |

| No. | Scientific name | Part Used | Symptoms/Indications | Preparation & Administration | Ref. |
|-----|---|-----------|---|---|--------------------|
| 35 | <i>Ochna serrulata</i> (Hochst.) Walp. | S | Sexual weakness; increase virility; aphrodisiac | Decoction 30 min of 4 handfuls in 4 glasses water; drink ½ glass 2×/day for 2 days | T15, T8 |
| 36 | <i>Ocimum grandiflorum</i> Lam | R | Sexual weakness; premature ejaculation; aphrodisiac | Maceration 4 h of 1 handful in 1 glass alcoholic beverage; drink 1-2×/day; half a handful mixed in food | T6, T3, T9 |
| 37 | <i>Ophioglossum reticulatum</i> L. | L/R | Improve sexuality; anti-depression; aphrodisiac | Maceration 2 h of 4 handfuls in 1 glass water; drink before intercourse | T26, T1, T2 |
| 38 | <i>Parinari-moballa</i> or <i>Parinari curatellifolia</i> Planch. ex Benth. | St | Aphrodisiac | Decoction 30 min of 6 palmfuls in 3 glasses water; drink 1 glass 2×/day for 2 days | T29, T3, T10 |
| 39 | <i>Phyllanthus muellerianus</i> (Kuntze) Exell | R | Premature ejaculation; delay ejaculation; aphrodisiac | Decoction 30 min of 7 handfuls in 5 glasses water; drink ½ glass morning and evening for 3 days | T28, T1, T30 |
| 40 | <i>Piliostigma thonningii</i> (Schum.) Milne-Redh. | R | Strong erection; boost libido; aphrodisiac | Decoction 5 min of 1 handful in 0.5 glass water; drink 10 min before intercourse | T5, T30 |
| 41 | <i>Pterocarpus angolensis</i> DC. | R | Strength; aphrodisiac | Maceration 24 h of 5 handfuls in 5 glasses water; drink 1 glass/day before intercourse | T5, T33 |
| 42 | <i>Rauwolfia serpentina</i> L. | St | Lack of libido or boost libido; aphrodisiac | Infusion 15 min of 4 handfuls in 1 glass water; drink 1 glass 15 min before intercourse | T15, T5, T1 |
| 43 | <i>Schrebera trichoclada</i> Welw. | R | Lack of libido; initiate excitement; aphrodisiac | Decoction 15 min of 2 handfuls in 1 glass water; drink 1 glass 1 h before intercourse | T11, T17 |
| 44 | <i>Solanum nigrum</i> L. | Fr | Premature ejaculation; sexual desire; aphrodisiac | Infusion 20 min of 2 handfuls in 1 glass water; anal purgation 2×/day; decoction 30 min of 6 handfuls in 1 glass water; drink 2 glasses/day | T30, T32, T4 |
| 45 | <i>Spathodea campanulata</i> P. Beauv. | Fl | Sexual strength; prolong intercourse; aphrodisiac | Decoction 5 min of 5 handfuls in 1 glass water; drink 2 glasses/day (morning & evening) | T4, T11 |
| 46 | <i>Strychnos cocculoides</i> Lam | R | Aphrodisiac; infertility | Decoction 30 min of 5 handfuls in 7.5 glasses water; drink 3 glasses/day for 3 days | T31, T1, T5 |
| 47 | <i>Strychnos spinosa</i> Lam | R | Aphrodisiac; infertility | Decoction 30 min of 5 handfuls in 7.5 glasses water; drink 3 glasses/day before intercourse | T32, T10, T5 |
| 48 | <i>Strychnos stuhlmannii</i> Gilg | R | Aphrodisiac; boost libido | Decoction 10 min of 2.5 handfuls in 0.75 L water; drink 1 glass 2×/day for 2 days | T11, T33 |
| 49 | <i>Syzygium aromaticum</i> L. | R | Sexual weakness in men; low sexual appetite | Decoction 25 min of 1 handful in 3 glasses water; drink 1 glass 2×/day for 2 days | T12, T2, T14 |
| 50 | <i>Terminalia mollis</i> M.A. Lawson | R | Sexual weakness; premature ejaculation; lack of orgasm & libido | Infusion 5 min of 5 handfuls in 7.5 glasses water; drink ½ glass 2×/day for 4 days | T33, T6, T15 |
| 51 | <i>Zingiber officinale</i> Roscoe | L/R | Sexual weakness; aphrodisiac | Decoction 30 min of 6 handfuls in 7.5 glasses water; drink ½ glass 2×/day for 4 days | T5, T6 |
| 52 | <i>Ziziphus abyssinica</i> Hochst. ex A. Riche | St | Stimulate appetite; aphrodisiac | Decoction 30 min of 5 handfuls in 5 glasses water; drink 1 glass 2×/day for 5 days | T10, T14, T11, T12 |

V: 250 mL glass; mL: millilitre; pdt: during. Root (R); Leaves (L); Stem (St); Pod (P); Bulbs (B); Rhizomes (Rh); Whole plant (Wp); Seed (S); Flowers (Fl); Fruit (Fr)

The data in **Table 2** are summarised in the figure below.

Figure 2:
Sexual Dysfunctions Treated by Selected Plants



As shown in **Figure 2**, sexual weakness (28 cases out of 71; 39.4%) was the most frequently cited complaint for which patients consulted traditional therapists or resource persons. This was followed by lack of libido (19 cases out of 71; 26.8%).

Other Pathologies Treated by Aphrodisiac Plants

The survey revealed that the documented plant species are not used exclusively for the treatment of sexual dysfunctions. Many are also employed to address other health conditions, some of which may be directly or indirectly related to sexual disorders.

Table 3 expands the scope of the ethnobotanical analysis by presenting these additional pathologies treated with the same plant species. It also provides detailed information on

the methods of preparation and administration of the remedies, based on the data gathered from respondents.

Table 3:

General results of the ethnobotanical survey (other pathologies and sexual disorders)

| N° | Scientific Name | Part Used | Symptoms / Indications | Preparation & Administration | Ref. |
|----|--|-----------|--|--|--------------------------|
| 01 | <i>Abrus precatorius</i> L. | S | Conjunctivitis | Fumigation: burn seeds, observe smoke | T1, T6, T11 |
| | | R | Dysentery, purgative, cholera | Decoction: 3 handfuls/L, 30 min, drink 1 glass 3×/day for 4 days | |
| | | L+R | Cough, bronchitis, sore throat | Decoction: 1 handful/2 glasses water, 30 min, drink 1 glass 2×/day for 7 days | |
| 02 | <i>Acalypha sinensis</i> L. | L | Fever, sexual disorders | Infusion: 2 handfuls/250 mL, drink 1 glass 2×/day | T2, T6, T12 |
| | | St | Intestinal/kidney disease, diarrhea, mouth sores | Gargle twice daily | |
| 03 | <i>Albizia versicolor</i> Var. | R | Gonorrhea, stomach aches, sterility | Decoction: 2 handfuls/2 cups, 20 min or maceration 1 day, 2 handfuls/2 cups, drink 1 cup 3×/day for 7 days | T3, T14, T15 |
| 04 | <i>Alchemilla vulgaris</i> L. | Wp | Antibacterial, anti-inflammatory, diarrhea, gastrointestinal disorders, dysmenorrhea | Infusion: 2–4 g, drink 2–3 mL 3×/day until healed | T4, T5, T11 |
| | | R | Diarrhea, stomach aches, mouth/throat infections, skin irritations, wounds, menorrhagia, painful menstruation | Infusion: 6–20 g in 800 mL, drink 400–600 mL until healed | |
| 05 | <i>Allium sativum</i> L. | L | Heaviness in legs, schistosomiasis, stomach aches, intestinal worms | Decoction 15 min: 28 g/L, drink 400–800 mL/day; Chew 4–5 cloves/day | T9, T3, T7 |
| | | P | Skin infections | Poultice: 3–4 cloves, apply 2×/day | |
| 06 | <i>Anisophyllea pomifera</i> Engl. & Brehmer | L | Psychological problems, spells, witchcraft | Decoction: 1 handful/400 mL, drink ½/day for 7 days | T9, T3, T7 |
| 07 | <i>Albizia versicolor</i> Var. | Wp | Painful periods, infertility | Decoction: 2 handfuls/500 mL, drink ½–¾/day for 7 days | T8, T7, T16 |
| | | – | Rheumatism | Powder applied locally | |
| 08 | <i>Apium graveolens</i> L. | Wp | Rheumatism, appetite, exhaustion, cardiovascular effects, antimicrobial, dewormer, anti-inflammatory, stimulant, flu | Decoction: 30 min, 30 g/L, drink 200 mL 3×/day for 7 days | T1, T9, T15 |
| 09 | <i>Asparagus acutifolius</i> L. | Wp | Antimicrobial, fatigue, antifungal, anti-protozoal | Decoction: 30 min, 4 handfuls/L, drink 200–400 mL 3×/day for 7 days | T1, T10, T14 |
| 10 | <i>Bobgunnia madagascariensis</i> Desv. | R | Antifungal, anti-schistosomiasis, aphrodisiac | Decoction: 30 min, 2 handfuls/2 L, drink 200 mL 3×/day for 5 days | T9, T10, T16 |
| 11 | <i>Camellia sinensis</i> (L.) Kuntze | L | Digestive ailments, burns, eyelid swelling, nerve tonic, tooth decay, slimming, aphrodisiac | Decoction: 30 min, 2 handfuls/1 L, drink 200 mL 3×/day until cured | T10, T12, T3 |
| 12 | <i>Celtis mildbraedii</i> Eng | R | Constipation, cough, tuberculosis, heart pain | Decoction: 1 handful/250 mL, drink 1 spoonful 3×/day for 10 days | T10, T3 |
| 13 | <i>Combretum collinum</i> | R | Anti-inflammatory, antibacterial, anti-fatigue, antidiarrheal, dysentery, constipation | Decoction: 30 min, 2 handfuls/2 L, drink 200 mL 2×/day | T1, T12, T14 |
| 14 | <i>Croton haumanianus</i> | Wp | Infections, rheumatism, stomach aches | Decoction: 30 min, 2 handfuls/1 L, drink 100 mL 2×/day; enema | T1, T6, T16 |
| | | – | Hernia, edema, painful urination, rheumatism | Local: bark powder + palm oil | |
| 15 | <i>Croton sylvaticus</i> | L | Painkillers, antibiotics, anti-inflammatory, antifungal, ear drops | Juice applied to ear | T1, T15 |
| | | R+St | Gastric disorders, elephantiasis, urinary tract infection | Infusion: 2 handfuls/1 L, drink 1 glass/day until healed | |
| 16 | <i>Dalbergia boehmii</i> | R | Injuries, inflammation, burns, malaria in children, snake bites | Decoction: 30 min, 2 handfuls/2 L, drink 200 mL 2×/day + full-body bath | T10, T6, T13 |
| 17 | <i>Diospyros virginiana</i> | Fr | Bloody stools | Decoction: 20 min, 2 handfuls/0.5 L, drink 1 glass 2×/day for 3 days | T8, T9, T13, T1, T7, T19 |
| | | L | Astringent, mouthwash for thrush/sore throat | Chew 2–3 leaves | |
| | | St | Warts, cancers | Decoction: 30 min, 2 handfuls/1 L, drink/gargle morning & evening | |

| N° | Scientific Name | Part Used | Symptoms / Indications | Preparation & Administration | Ref. |
|----|-------------------------------------|-----------|--|--|-----------------|
| 18 | <i>Diospyros batocana</i> | R | Leprosy, hemorrhage, incontinence, insomnia, hiccups, diarrhea | Root scrapings + oil, applied topically | T1, T17, T22 |
| 19 | <i>Diplorhynchus condylocarpion</i> | L | Headache, stomach ache | Chew 4 leaves morning & evening until relieved | T6, T1, T2, T22 |
| | | Fr+R | Chronic cough, pulmonary tuberculosis | Decoction, drink 1 glass 2×/day | |
| | | R | Fever, diarrhea, antidote, emetic | Infusion: 2 handfuls/1.5 L, drink 1 glass 3×/day | |
| 20 | <i>Dracaena dragonnier</i> | L | Ringworm, general diseases | Juice: washing | T6, T13, T22 |
| | | R | Fungal infections, wounds | Decoction: 30 min, 2 handfuls/2 L, drink 1 glass/day before activity | |
| 21 | <i>Erythrophleum suaveolens</i> | R | STI, diarrhea | Decoction: 30 min, 5 handfuls/1.5 L, drink 2 glasses 3×/day for 5 days | T22 |
| 22 | <i>Erythrina abyssinica</i> | Sap | Dewormer | Drink ¼ tsp sap morning & evening for 3 days | T13, T22 |
| | | R, St | Schistosomiasis | Decoction: 20 min, 3 handfuls/1 L, drink ½ tsp 3×/day for 7 days | |
| 23 | <i>Ficus glumosa</i> | L | Diarrhea, sprain pain, fatigue, headache | Drink ¼ tsp latex; topical/ocular application of latex | T34, T1, T20 |
| | | R+St | Tooth decay, toothache, conjunctivitis, wounds | Bark+latex powder applied locally | |
| | | – | Sterility | Decoction: 2 handfuls/400 mL, drink as mouthwash until cured | |
| 24 | <i>Garcinia kola</i> | S | Antibacterial, ENT disorders, mouth disorders | Maceration 1 day: 5 handfuls/1.5 L, drink 1 glass 3×/day for 2-3 days | T35, T22 |
| | | – | Diseases & STDs, antidote, venom, astringent | Chew 1-2 seeds morning & evening | |
| 25 | <i>Gardenia jovis-tonantis</i> | St | Malaria, hypertension, diabetes, cough, asthma, rheumatism, diarrhea | Decoction: 30 min, 4 handfuls/2 L, drink 3×/day for 4 days | T1, T11 |
| | | – | Hernia, hemorrhoid, cancer, leprosy, tooth decay | Decoction: 7 days; pounding & local application for pain | |
| 26 | <i>Gladiolus klattianus</i> | P | Infertility, snake bites | Decoction: 15 min, 2 handfuls/2 L, drink 200 mL 3×/day for 5 days | T12, T21 |
| 27 | <i>Heinsia crinita</i> | St | Malaria, back pain | Consume stems as a drink | T17, T1, T31 |
| 28 | <i>Hibiscus rosa-sinensis</i> | L | Fever, conjunctivitis | Topical: leaf juice instilled for conjunctivitis | T34, T22 |
| | | L, Fl | Fever, flu, cough | Decoction: 30 min, 2 handfuls/2 L, drink 1 glass 3×/day for 3 days | |
| 29 | <i>Hymenocardia acida</i> | R | Toothache, skin irritations | Decoction: 30 min, 2 handfuls/2 L, drink 1 glass/day | T13, T5 |
| | | L | Injuries, cough | Bark scrapings applied topically; chew 4-5 raw leaves | |
| 30 | <i>Imperata cylindrica</i> | L, Fl | Bacterial infections | Decoction: 30 min, 2 handfuls/2 L, 1-2 L/day for 7 days | T23, T6, T7 |
| | | Rh | Ringworm, skin infections | Crush, press, drink & apply topically | |
| | | – | Anthelmintics, intestinal infections | Chew three 2 cm rhizome stems | |
| 31 | <i>Indigofera capitata kotschy</i> | L | Epilepsy, asthma, bronchitis, fever, stomach & kidney disorders | Infusion: 2 handfuls/2 L, drink 1-2 L/day for 3 days | T15, T1, T2 |
| | | R | Skin diseases, wounds, hemorrhoids | Powdered roots in ointment, applied topically | |
| | | – | Toothache, syphilis, gonorrhea, kidney stones | Decoction: 30 min, 2 handfuls/2 L, drink 1-2 L/day for 5 days | |
| | | – | Antidote to snake bites, insect & scorpion stings | Infusion: 2 handfuls/2 L, drink 1-2 L/day for 3 days | |
| 32 | <i>Kigelia africana</i> | Fr | Tones female breast (pectoral) | Topical application | T24, T5, T7 |
| | | – | Snake bites, toothaches, stomachaches, circulatory stimulant | Maceration: 8 h, 4 handfuls/1 L, drink 1-2 L/day, mouthwash | |
| 33 | <i>Mirabilis jalapa L.</i> | R | Sprains, edema, wounds | Plasters | T5, T7 |
| | | – | Headaches, leprosy, dewormer | Decoction: 2 handfuls/2 L, drink 1-2 L/day; enema | |
| 34 | <i>Moringa oleifera</i> | P | Burns, colds | Infusion, oil, topical application | T15, T8 |
| | | R | Diabetes, cancer | Decoction: 2 handfuls/500 mL, drink 1 L/day | |
| 35 | <i>Ochna serrulata</i> | – | Children's bone diseases, gangrenous proctitis | Decoction: 5 handfuls/2 L, drink 1 L/day | T6, T3, T9 |
| 36 | <i>Ocimum grandiflorum</i> | R, L | Nausea, muscle weakness, period pain | Infusion: 2 handfuls/1-2 cups water, drink 1-3 cups/day for 2-3 days | T26, T1, T2 |

| N° | Scientific Name | Part Used | Symptoms / Indications | Preparation & Administration | Ref. |
|----|---------------------------------------|-----------|---|---|--------------------|
| 37 | Ophioglossum reticulatum | Rh | Snake bites, angina | Decoction: apply hot; leaf juice drink | T29, T3, T10 |
| 38 | Parinari macrophylla Sabine ou Mobola | R, St, L | Chest pain, fever, stomach ache, dysentery, circumcision wound, rheumatism | Decoction: 4 handfuls/1 L, drink 1 glass 2×/day for 3–7 days; local rubbing 7 days | T28, T1, T30 |
| 39 | Phyllanthus muellerianus | L | Malaria, hypertension, constipation, diabetes, snake bite | Maceration: 4 h, 3 handfuls/1 L, drink 1 glass 2×/day for 2–3 days | T5, T30 |
| | | St | Relief: sitz bath 2×/day | – | |
| | | R | Hemorrhoids, anemia, STIs, diarrhea, cholera | Decoction: 30 min, 6 handfuls/1.5 L, drink 1 glass 3×/day for 3 days | |
| 40 | Piliostigma thonningi | R | Dysentery, diarrhea, internal abscesses, cough, leprosy, sore throat, malaria | Decoction: 30 min, 6 handfuls/2 L, drink 2–3 glasses/day for 5 days | T5, T33 |
| | | St | Schistosomiasis | Maceration: drink ½ glass 2×/day for 5 days | |
| 41 | Pterocarpus angolensis | R | Schistosomiasis, inguinal hernia, diarrhea, abdominal pain | Decoction: 30 min, 2–3 pinches/1 L, drink 3 glasses/day for 7 days | T15, T5, T1 |
| | | St | Gonorrhea, syphilis, hemorrhoids | Decoction: 30 min, 2–3 pinches/1 L, drink ½ glass as needed; sitz bath | |
| 42 | Rauwolfia serpentina | R | Neuroleptics, insomnia, epilepsy, asthma, anti-anxiety, sedative, antihypertensive, relaxing effects | Decoction: 30 min, 2 handfuls/1 L, drink ½ glass 2×/day | T11, T17 |
| 43 | Scherbera trichoclade | L+St | Cough, malaria | Decoction: 30 min, 2 handfuls/1 L, drink 1 glass 2×/day for 5 days | – |
| 44 | Solanum nigrum | Fr | Schistosomiasis, worms, liver disorders, chronic skin conditions | Eat raw fruits 1–2/day | T30, T32, T4 |
| | | L | Inflammation, painful periods, fever, diarrhea, eye diseases, analgesic, antimicrobial, tuberculosis, diuretics | Infusion: 1 handful/1 L, drink 1 glass 2×/day for 3 days | |
| 45 | Spathodea campanulata | Fl | Newborn rash | Drink flower liquid | T4, T11 |
| | | R+St | Malaria, HIV, diabetes mellitus, edema, dysentery | Decoction: 30 min, 1 handful/bath water | |
| | | L, Fl | Constipation, gastrointestinal disorders, skin diseases, wounds, fever, toxic antidote | Decoction: 30 min, 1 handful/1 L, drink 1 glass 2×/day until symptoms subside | |
| 46 | Strychnos cocculoides | R | Abdominal pain, gonorrhea, male infertility, sore throat, malaria, flu, STIs, schistosomiasis | Decoction: 30 min, 2 handfuls/1 L, ½ ounces/day for 3 days | T31, T1, T5 |
| 47 | Strychnos stuhlmannii | R | Malaria, flu, STIs, schistosomiasis | Maceration: 1–2 pinches/1 glass/24 h | T32, T10, T5 |
| 48 | Strychnos spinosa | R | Schistosomiasis, antimicrobial, anti-dysentery | Infusion: 2 pinches/1–2 L, drink ½ glass 3×/day for 5 days | T11, T33 |
| 49 | Syzygium aromaticum | R | Dental problems | Decoction: 30 min, 1–2 pinches/200 mL, mouthwash | T12, T2, T14 |
| | | – | Malaria, diarrhea, schistosomiasis | Maceration: 24 h, drink 1 L/day until cured | |
| 50 | Terminalia mollis | St | Bilharzia, cough, measles, anal mycosis | Decoction: 30 min, 4 handfuls/1 L, drink 2–3 glasses/day for 5 days; bath | T33, T6, T15 |
| | | R | Rectal hernia, asthma, jaundice | Maceration: 24 h, 3 handfuls/2 L, drink 1 glass 2×/day for 3 days | |
| | | L | Stomach aches, malaria, intestinal worms, cancer, dysentery, diarrhea | Decoction: 30 min, 4 handfuls/1 L, drink 1 L 2×/day; powder applied topically | |
| 51 | Zingiber officinale Roscoe | Rh | Diarrhea, vomiting, fever, flu, indigestion, asthma, catarrh, stomach pain, cough, cold | Decoction: 20 g fresh material/1 L, drink 1 glass 2–3×/day | T5, T6 |
| 52 | Ziziphus abyssinica | R | Postpartum pain, snake bites | Decoction: 30 min, 4 handfuls/1 L, drink 1 L until results seen | T10, T14, T11, T12 |
| | | L | Induce abortion | Decoction: 30 min, 2 handfuls/1 L, mixed with Rhyngosia resinosa, 1 handful/1 L, drink until relief | |
| | | R | Stomach aches | Root powder rubbed on chest | |
| | | – | Pneumonia, tonsillitis | Decoction: 30 min, 4 handfuls/1 L of leaves, steam bath | |

R = Root; L = Leaves; St = Stem; P = Pod; B = Bulbs; Rh = Rhizomes; Wp = Whole plant; S = Seed; Fl = Flowers; Fr = Fruit

To provide a clearer overview of the distribution of each pathology or non-aphrodisiac symptom listed in [Table 3](#), the data are summarised in detail in [Table 4](#).

Table 4:
Number and frequencies of pathologies, symptoms, or indications

| Pathology/Indication | Eff | % | Pathology/Indication | Eff | % |
|----------------------|-----|--------|----------------------------|-----|--------|
| Abortion | 1 | 0.3039 | Fatigue | 13 | 3.9507 |
| Analgesic | 2 | 0.6078 | Fever | 9 | 2.7351 |
| Anemia | 2 | 0.6078 | Flu and cold | 6 | 1.8234 |
| Angina pectoris | 1 | 0.3039 | Gastrointestinal disorders | 16 | 4.8624 |
| Anthelmintic | 4 | 1.2156 | Gynecological conditions | 1 | 0.3039 |
| Anti-anxiety | 2 | 0.6078 | Healing agent | 5 | 1.5195 |
| Anti-inflammatory | 10 | 3.039 | Hemorrhoids | 5 | 1.5195 |
| Antidote | 15 | 4.5585 | Hernia | 3 | 0.9117 |
| Antifungal | 3 | 0.9117 | Hypertension | 4 | 1.2156 |
| Antiprotozoal | 1 | 0.3039 | Infertility | 5 | 1.5195 |
| Antiseptic | 1 | 0.3039 | Insomnia | 6 | 1.8234 |
| Antiviral | 1 | 0.3039 | Jaundice | 1 | 0.3039 |
| Appetite stimulant | 1 | 0.3039 | Leprosy | 4 | 1.2156 |
| Asthma | 5 | 1.5195 | Measles | 1 | 0.3039 |
| Boils | 1 | 0.3039 | Menorrhagia | 1 | 0.3039 |
| Bronchitis | 2 | 0.6078 | Mental disorders | 3 | 0.9117 |
| Burns | 3 | 0.9117 | Muscle pain | 11 | 3.3429 |
| Cancer | 5 | 1.5195 | Nausea, emetic | 14 | 4.2546 |
| Cardiac pain | 1 | 0.3039 | Neuroleptic disorders | 1 | 0.3039 |
| Chest pain | 1 | 0.3039 | Painful menstruation | 4 | 1.2156 |
| Childhood malaria | 10 | 3.039 | Pneumonia | 2 | 0.6078 |
| Cholera | 2 | 0.6078 | Postpartum pain | 2 | 0.6078 |
| Cough | 9 | 2.7351 | Purgative | 1 | 0.3039 |
| Dental issues | 8 | 2.4312 | Relaxing effects | 2 | 0.6078 |
| Diabetes | 4 | 1.2156 | Ringworm | 1 | 0.3039 |
| Diarrhea | 18 | 5.4702 | Schistosomiasis | 11 | 3.3429 |
| Digestive disorders | 2 | 0.6078 | Sedative | 1 | 0.3039 |
| Diuretics | 1 | 0.3039 | Skin diseases | 12 | 3.6468 |
| Dysentery | 8 | 2.4312 | STIs | 20 | 6.078 |
| Dysmenorrhea | 1 | 0.3039 | Tonic | 3 | 0.9117 |
| Elephantiasis | 1 | 0.3039 | Tonsillitis | 6 | 1.8234 |
| ENT disorders | 3 | 0.9117 | Tuberculosis | 3 | 0.9117 |
| Epilepsy | 2 | 0.6078 | Urinary incontinence | 1 | 0.3039 |
| External hemorrhage | 1 | 0.3039 | Warts | 1 | 0.3039 |
| Eye diseases | 4 | 1.2156 | Weight loss | 1 | 0.3039 |
| Eyelid swelling | 2 | 0.6078 | Wound treatment | 11 | 3.3429 |

Therapeutic Versatility of Documented Plants

During the survey, it was observed that the documented plants do not only treat sexual dysfunction but also address other pathologies. Beyond their aphrodisiac applications, the plants recorded in this survey exhibit a wide range of

therapeutic uses, underscoring their central role in traditional healthcare systems. Among the most frequently cited non-aphrodisiac indications were sexually transmitted infections (6.08%), diarrhoea (5.47%), nausea and vomiting (4.25%), antidotal uses (4.56%), and gastrointestinal disorders (4.86%). Conditions such as fatigue, skin diseases, and muscle pain were also commonly reported.

These figures reflect the multifunctionality of the medicinal flora and suggest that many of the identified species form part of a broader therapeutic repertoire within the community. The predominance of infections, digestive issues, and general health conditions highlights the population's reliance on traditional medicine for both acute and chronic ailments. Such diversity in usage patterns calls for deeper pharmacological validation of the plants' multiple bioactivities.

A total of 73 pathologies were identified, some of which may be indirectly linked to sexual dysfunction. In this context, treatment of these conditions could also involve the consumption of aphrodisiac plants. These include relaxing effects (0.6%), anti-haemorrhoidal properties (1.5%), anti-hernia effects (0.9%), tonic effects (0.9%), purgative properties (0.3%), and notably anti-diabetic effects (5.5%), given the well-established relationship between diabetes and sexual dysfunction. These overlapping uses reinforce the idea that aphrodisiac plants play a broader therapeutic role beyond their primary indication and support their inclusion in holistic approaches to traditional medicine.

Preparation, Administration Methods, and Distribution of Plant Organs

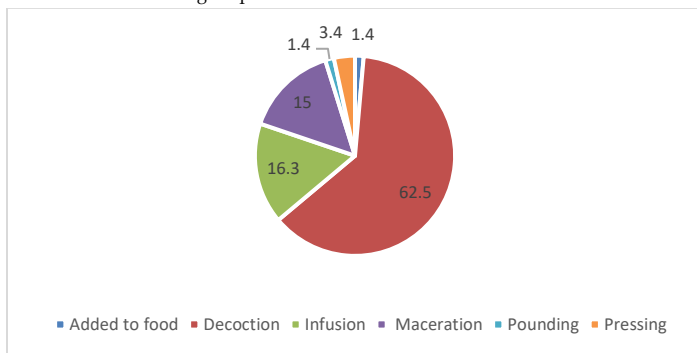
Preparation methods

The most cited preparation method was decoction (62.5%), followed by maceration and infusion. Oral administration was dominant (74.8%). The most commonly used plant parts were underground organs: roots (40.7%), rhizomes (1.7%), pods (2.9%), and bulbs (0.6%), together accounting for 45.9% of uses. Stems represented 25% of the total. Dosages varied according to the plant used and the healer's experience. Remedies were mostly consumed as drinks, with specific timing or repetition in some cases.

Drug extraction and preparation

Figure 3 shows that decoction is the most commonly used method for preparing and obtaining plant-based remedies (62.5%), followed by infusion (16.3%) and maceration (15%). Together, these three methods account for 93.8% of the total.

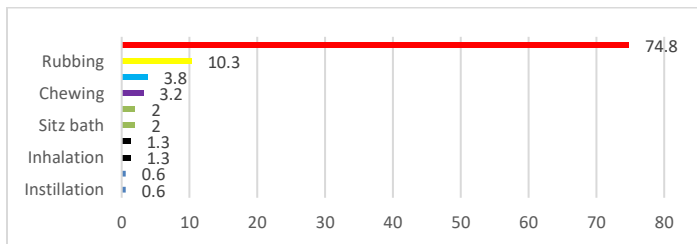
Figure 3:
Different Forms of Drug Preparations



Modes of Administration of Phytodrugs

Pharmaceutical forms are adapted to the mode of use and, above all, to achieve the best therapeutic effect. The administration of medicinal preparations is generally directed toward the anatomical part or the affected organ (Petit et al., 2004). Ten modes of administration were identified (Figure 4), among which drinking (74.8%) remains the most commonly used method for treating sexual dysfunction and other pathologies. It is followed by rubbing (10.3%), enemas (3.8%), and chewing (3.2%). In traditional treatment, drinking is often the most utilised mode of administration (Petit et al., 2004). This is corroborated by Sakara et al. (2018), who found that oral administration is the most preferred method, with 44% of recipes in the form of drinks.

Figure 4:
Modes of Administration

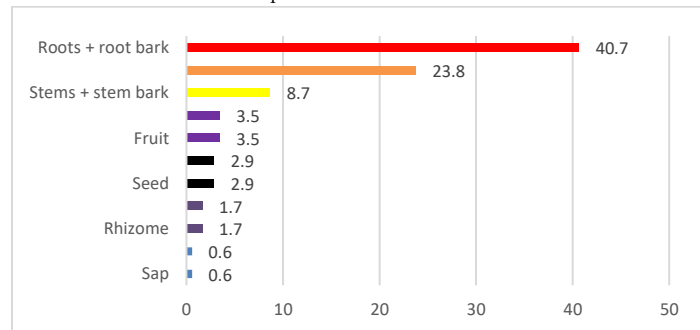


Distribution of Used Plant Organs

In preparing their recipes, traditional practitioners use various plant organs, including stems, roots or their bark,

leaves, flowers, fruits, tubers, pods, and seeds. Figure 5 illustrates the different organs and their percentages of use by resource persons in this research.

Figure 5:
Used Plant Parts and Their Frequencies



Roots or their bark (40.7%) are the most commonly used plant parts. This result aligns with Kalunga (2021), who found that roots were used with a frequency of 60% in the treatment of schistosomiasis. Leaves follow at 23.8%, while other parts are used at percentages ranging between 0.6% and 8.7%. The high usage frequency of leaves can be explained by their ease and quick harvesting process (Bitsindou, 1986; Mbuyi, 2022).

Ethnobotanical Trends

The ethnobotanical survey highlights several distinctive trends in the traditional use of aphrodisiac plants in Lubumbashi. First, the frequent use of underground plant parts, particularly roots, reflects a belief that these organs contain the most potent active compounds. Decoction emerged as the preferred preparation method, followed by infusion and maceration, suggesting a practical adaptation to local knowledge and perceived effectiveness. Oral administration, mainly in the form of drinks, dominates, indicating a systemic approach to traditional remedies.

Moreover, the documented plant species exhibit therapeutic versatility, being employed not only to address sexual weakness but also to treat other ailments such as diabetes and digestive disorders. This multifunctional use underscores a rich empirical knowledge, largely passed down through generations within communities that particularly favour families like Fabaceae, which are highly represented among aphrodisiac species. Altogether, these patterns reveal a coherent traditional pharmacopoeia rooted in cultural heritage, consistent practices, and a

promising potential for scientific validation and sustainable application.

DISCUSSION

This study highlights several ethnobotanical, sociocultural, and therapeutic dimensions related to the use of aphrodisiac plants in the traditional medicine of Lubumbashi and its surroundings. The age distribution of healers (mean = 50 years, majority over 40) reinforces their credibility, as older practitioners are generally perceived as more experienced and legitimate within their communities (Kalunga, 2021; Mbuyi, 2022). This observation is consistent with the mode of knowledge transmission, which is often based on long-term observation or inheritance following the death of a senior healer (Didier, 2015).

The predominance of men (54.3%) among healers aligns with the findings of Kalunga (2021) and Dikala et al. (2024) but contrasts with the observations of Salhi et al. (2010), who reported a female majority in Kenitra, Morocco. This suggests that gender dynamics in traditional medicine vary by region.

The presence of multilingual healers facilitates broader transmission and adaptability of ethnobotanical knowledge in a culturally diverse city such as Lubumbashi. This linguistic ability contributes to the resilience and evolution of traditional practices across generations and ethnic groups.

The strong representation of Luba healers, particularly from Katanga (31.4%) and Kasai (25.7%), reflects both local demographics and historical migratory movements that have shaped the dissemination of traditional knowledge. The Luba people are recognized for their rich cultural heritage, including medicinal practices (James, 2014). The presence of minority ethnic groups (Tabwa, Holoholo, Kalanga, etc.) underscores the pluralistic nature of traditional medicine and the importance of preserving diverse knowledge systems.

The predominance of the Fabaceae family among identified aphrodisiac plants is closely linked to its well-documented pharmacological potential and wide distribution across African flora. This family occupies a central place in traditional pharmacopoeia due to its richness in bioactive

secondary metabolites, including alkaloids, flavonoids, saponins, peptides, and isoflavones (Wink, 2013). These compounds provide a strong biochemical basis for the use of Fabaceae species in treating sexual dysfunctions. Furthermore, their chemical diversity explains their effectiveness in managing other systemic conditions, such as diabetes (Bakari et al., 2013) and sickle cell disease (Kanangila et al., 2013).

Other botanical families, including Euphorbiaceae, Lamiaceae, and Phyllanthaceae, were also frequently cited. They contain species rich in bioactive compounds, such as alkaloids, flavonoids, and terpenoids, further enhancing their therapeutic value (Pandey et al., 2011; Seigler, 2006; Wink, 2013). The balanced distribution of species across 31 families reflects a broad pharmacological foundation conducive to further phytochemical and pharmacological research.

Underground parts (roots, rhizomes) are the most commonly used plant parts, possibly reflecting symbolic beliefs associated with strength and vitality. However, leaves accounted for 23.8% of the parts used, ranking just after roots. Their accessibility, renewability, and richness in secondary metabolites make them valuable resources. Their widespread use may also indicate a preference for more sustainable harvesting practices.

Decoction was the most common preparation method (62.5%), followed by infusion (16.3%) and maceration (15%). These techniques, although simple, are effective and well mastered, transmitted from generation to generation. Infusion is often used for delicate parts, such as leaves, while maceration allows cold extraction that preserves certain active ingredients.

Modes of administration varied: oral intake predominated (74.8%), but other practices, including rubbing (10.3%), enemas (3.8%), and chewing (3.2%), were also observed. These choices reflect a refined understanding of physiopathology, with methods adapted to the target organ or desired speed of action.

The variability in dosage according to the healer's experience and the patient's condition illustrates the empirical nature of traditional medicine. While this flexibility allows for a personalized approach, it may also

lead to variations in efficacy and safety, highlighting the need for ethnopharmacological validation to bridge traditional and modern medical systems.

The recorded plants are not solely used to treat sexual dysfunctions but also play a role in managing diabetes, infections, digestive disorders, fatigue, and sexually transmitted infections (STIs). This multifunctionality reflects the holistic approach of traditional medicine, which seeks not only to manage symptoms but also to address the root causes of sexual disorders. For instance, some species with antidiabetic properties may improve sexual function by addressing common metabolic comorbidities. This link is also highlighted in biomedical research, where many experimental protocols assessing the aphrodisiac activity of plants induce diabetes in laboratory mice to simulate a pathological context affecting sexuality (Raji et al., 2003; Watcho et al., 2009; Yakubu et al., 2005).

The literature indicates that erectile dysfunction (ED) is a common condition that significantly affects patients' quality of life. Its prevalence is estimated at 20% to 45% in Western countries, with an annual incidence of 25 to 30 new cases per 1,000 inhabitants (Droupy, 2005). Major risk factors include advanced age, diabetes mellitus, cardiovascular diseases, urogenital or psychiatric disorders, and unhealthy lifestyle habits, such as smoking or taking certain medications (particularly antihypertensives or psychotropics). Moreover, ED is now recognized as an early marker of underlying cardiovascular or metabolic conditions, justifying early and comprehensive clinical management.

At the local level, this study reveals a prevalence of sexual weakness of 39.4%, highlighting the magnitude of the phenomenon within the studied population and underscoring the need for appropriate and multidimensional care.

Similar trends have been observed in developing countries. A multicentric study conducted in three culturally distinct countries—Pakistan, Egypt, and Nigeria—revealed particularly high ED prevalence rates among men aged 35 to 70: 80.8% in Pakistan, 63.6% in Egypt, and 57.4% in Nigeria. The study also noted a progressive increase in ED severity with age and confirmed associations with comorbidities, such as diabetes, prostate diseases,

depressive disorders, and excessive caffeine consumption. Conversely, regular and sustained physical activity was associated with a significantly lower prevalence of moderate to severe ED (Shaeer et al., 2003). These findings confirm that, despite different cultural contexts, the etiological factors of ED are broadly similar in low- and middle-income countries.

CONCLUSION

This ethnobotanical survey highlights the rich repertoire of 52 plants reputed for their aphrodisiac properties in Lubumbashi, predominantly from the Fabaceae family, mostly prepared as root decoctions and administered orally. These practices reflect deep cultural knowledge but also underline the need for bioactive validation and sustainable management. Although the sample size was modest (n = 35), it was determined according to the principle of data saturation, ensuring that the collected information was sufficiently comprehensive for analysis. However, the absence of laboratory analyses remains a limitation. We therefore recommend phytochemical screening of the most frequently cited species, in vitro evaluation of their aphrodisiac activity, and ecological studies to preserve wild plant populations. In sum, these findings preserve a valuable body of traditional knowledge and pave the way for locally based therapies supported by scientific evidence.

Authors' Contributions

1. **KANDA KABEYA Justin:** Study design, survey, data acquisition and analysis, draft writing.
2. **Mbayo Kitambala Marsi:** Data processing, manuscript writing.
3. **Mbuyu Ilunga Eddy, Muamba Malangu Lambert, Dikala Otete François, Munakongo Ebalantshim Daniel, Maloba Mwinensenge James, Kalonda Mutombo Emery, Mbuyi Kalonji Serge, Kanangila Bujitu Albert:** Fieldwork, data processing, and initial draft revision.
4. **Lumbu Simbi Jean-Baptiste:** Study supervision, manuscript correction, and additional data collection.

Ethical Approval: Nil required.

Conflicts of Interest: None declared.

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| | |
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| Mbuyu, I. E. ¹ : | Nil identified |
| Muamba, M. L. ² : | Nil identified |
| Dikala, O. F. ⁴ : | Nil identified |
| Munakongo, E. D. ⁵ : | Nil identified |
| Maloba, M. J. ⁴ : | Nil identified |
| Mbuyi, K. S. ³ : | Nil identified |

Mbayo, K. M.[‡]: Nil identified
 Kanangila, B. A.[‡]: Nil identified
 Kalonda, M. E.[‡]: Nil identified
 Lumbu, S. J-B.[‡]: Nil identified

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