



Ethnobotanical Survey of Some Aphrodisiac Medicinal Plants used in Kebbi State, Nigeria

Angela Nnenna Ukwuani-Kwaja¹, Umar Dabai Nuhu^{1,2}, Naima Musa Sani¹, Rebecca Samuel Maifada¹, Hauwa Mahe¹, Ibrahim Shehu¹, Ibrahim Mohammad Suru¹, Esther Philip¹, Binta Saidu¹, Aminu Ismail¹

¹Department of Biochemistry, Faculty of Life Sciences, Kebbi State University of Science and Technology, Aliero, P.M.B. 1144, Kebbi State, Nigeria.

²Department of Chemistry, School of Sciences, Adamu Augie College of Education, Argungu, P.M.B. 1012, Kebbi State, Nigeria.

Corresponding author: angelan.ukwuani-kwaja@ksusta.edu.ng

Abstract

The present research aimed to document aphrodisiac medicinal plants used in the formulation of a herbal remedy for sexual enhancement and performance in Kebbi State, Nigeria. A survey was undertaken from November 2023 to May 2024 in the four emirates of Kebbi State. The purposive sampling technique was used to collect data, along with self-administered questionnaires. The dataset was presented using descriptive statistics. A total of 544 responses were received from 700 questionnaires distributed. Participants aged 20-30 (54.22%), and those from Gwandu emirate (54.96%) constituted the majority. The survey identified 48 aphrodisiac plant species from 29 families; Fabaceae (34.48%) and Moraceae (10.34%) were the most dominant taxa. The most frequently cited were *Ziziphus mauritiana* Lam., *Azanza garckeana* (F.Hoffm.) Exell & Hillc., *Salvadora persica* Linn., *Crotalaria arenaria* R. Br., *Albizia chevalieri* A.Chev and *Boscia senegalensis* (Lam.) Poir. The predominant plant components employed as aphrodisiac herbal recipes were leaves, stem bark, fruits, and seeds. The most common preparation methods were dough (45.68%), syrup (29.22%), and mixed powder, while intra-vaginal application was the most frequent route of administration. The majority of participants used aphrodisiac plant recipes to improve sexual pleasure (33.10%), enhance libido (27.60%), increase lubrication (20.80%), and treat sexual dysfunction (orgasmic disorder 13.24% and arousal disorder, 5.33%). Some reported side effects from the use of these aphrodisiac herbs include headache (0.37%), stomachache (1.65%), vomiting (0.37%), and diarrhea (0.74%). A significant number of the participants expressed sexual satisfaction (81.8%) after using aphrodisiac recipes, and over half (51.47%) indicated regular use to enhance sexual drive. This current research has uncovered several promising aphrodisiac plant species traditionally recognized by inhabitants of Kebbi State for their libido-enhancement, sexual-performance properties, and enriched intimate experience.

Keywords: Aphrodisiac herbal recipes, vaginal insertion, sexual enhancement, Fabaceae, Moraceae

Funding: This research work was fully sponsored by the Nigerian Tertiary Education Trust Fund (TETFUND) through the Institution Based Research (IBR) Grant TETF/DR&D/CE/UNI/AALIERO/BATCH 17/2024/VOL. 1.

How to cite this paper: Ukwuani-Kwaja, A. N., Nuhu, U. D., Sani, N. M., Maifada, R. S., Mahe, H., Shehu, I., ... Ismail, A. (2026). Ethnobotanical Survey of Some Aphrodisiac Medicinal Plants used in Kebbi State, Nigeria. *Journal of Phytochemistry, Ethnobotany and Traditional Medicine Systems*, 2(1), 101–117. <https://doi.org/10.54117/jpetms.v2i1.74>

List of abbreviations: KSUSTA- Kebbi State University of Science and Technology, Aliero, PPU- Plant Parts Used, VN- Voucher Number, FC- Frequency of Citation, R-Root, S-Seed, SB-Stem Bark, L-Leaves, FL-Flower, F-Fruits.

1. Introduction

Aphrodisiacs are substances believed to heighten sexual desire, and improve sexual performance in intimate encounter. The fascination with aphrodisiacs has captivated human society for many years. Sexual satisfaction is a crucial aspect of women's overall health, influencing both physical and mental wellbeing (Vasconcelos *et al.*, 2024). Aphrodisiacs can be meals, herbs, or pharmaceuticals that are typically derived from plants, animals, or minerals (Kotta *et al.*, 2013; Jeffrey,

2024). Almost every culture employs various traditional medicines, usually herbal, in an attempt to intensify sexual desire, performance and treat impotence (Chen *et al.*, 2019; Dikala *et al.*, 2024). Aphrodisiacs are widely used in northern Nigeria as study has found that 67.6% of women utilized them (Ango *et al.*, 2021; Adamu *et al.*, 2022). Other cultures have also long recognized the significance of aphrodisiac medicinal plant recipes as effective sexual dysfunction and improving

Article History

Received: 27 Apr 2026

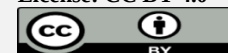
Accepted: 31 May 2026

Published: 18 Jun 2026



Scan QR Code to view¹

License: CC BY 4.0²⁴



Open Access article.

sexual desire, attraction and performance (Moore and Pithavadian, 2021; Netshiluvhi, 2025).

In northern Nigeria, it is widely believe that women in monogamous marriages utilize herbal aphrodisiacs to keep their husbands from taking another wife. Women in polygamous marriage, employ herbal aphrodisiacs to capture their husband's sexually interest. *Kayan-mata*, literally translated as “Women’s property or things”, refers to a generic name for diverse assortment of aphrodisiacs. *Kayan-mata* comprises an array of elements, including confections, lubricants, fragrances, cosmetics, herbs, sweetening agents, and spices. “The primary purpose of *Kayan-mata* is to enhance mutual pleasure, ensuring that your husband is satisfied and does not seek companionship outside the marriage. The majority of women who indulge in *Kayan-mata* use have emphasized that it boosts their self-esteem and confidence.

Ethnobotanical research on medicinal plants consistently serves as a vital platform for the prospective identification of novel bioactive compounds from hitherto unexplored and understudied taxa (Abubakar *et al.*, 2020; Mukti, 2024). Driven by the proven role of ethnomedicinal plants in addressing various ailments, scientific research into botanical resources has expanded worldwide. Conversely, such plants are increasingly threatened by overexploitation and agricultural encroachment, which diminish their populations and erode their socioeconomic contributions to indigenous communities (Lodha and Singh, 2025). Rapid urbanization in developing countries, including Nigeria, threatens the survival of traditional specialists and is precipitating a severe decline in knowledge regarding the application of indigenous medicinal flora (Ukwuani-Kwaja *et al.*, 2024; Ntakirutimana, 2025). To safeguard this imperiled knowledge base, global

ethnobotanical research initiatives are urgently required, as advocated by the World Health Organization (Cramer, 2023). The present survey seeks to document ethnobotanical knowledge of aphrodisiac plants in Kebbi State, Nigeria. The resulting data on the local pharmacopoeia are intended to serve as a valuable resource for identifying novel compounds for current and prospective drug development initiatives.

2. Materials and Methods

2.1 Description of Study Area

Kebbi State has a population of 3,256,541 million people as at 2006 population census and twenty one local governments divided into four Emirates councils (Argungu, Gwandu, Yauri and Zuru). It is situated in northwestern Nigeria, geographically bounded by latitudes 10° 8'N and 13° 15'N and longitudes 3° 30'E and 6° 2'E (Figure 1). It encompasses a total land area of approximately 37,699 km², of which 36.46% is classified as farmland. The state shares an extensive international border with the Republic of Niger (207 km to the north) and the Republic of Benin (103 km to the west), fostering significant intercultural and ethnic linkages. Internally, it is bordered by Sokoto State to the northeast, Zamfara State to the east, and Niger State to the south (Asogwa *et al.*, 2012). The predominant vegetation is Sudan and Sahel savanna. Kebbi State is blessed with substantial deposits of gypsum, marble and kaolin. The drainage system of the State in mainly Rima River which flows from the northern part of the State and empties into River Niger in the southern part. The region's economy is predominantly agrarian, characterized by a tripartite structure of cereal cultivation, livestock rearing, and aquaculture (Utomo, 2013; Gwimi *et al.*, 2015).

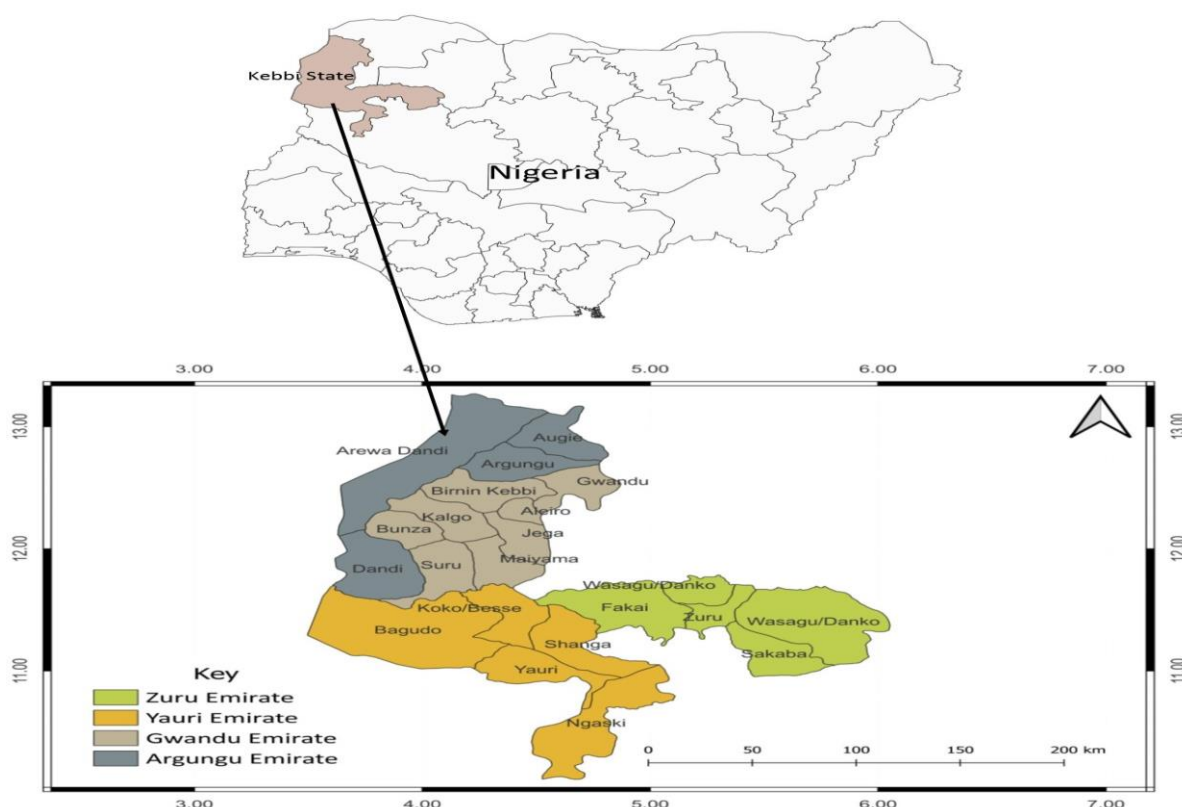


Figure 1: Cartographic representation of the survey study region

2.2 Survey Sampling Method

The survey was conducted in four Emirate Councils of Kebbi State, Nigeria, between November, 2023 and May, 2024. This study employed a purposive sampling approach, sometimes referred to as non-random probability and expert sampling, which does not necessitate a certain sample size (Awang *et al.*, 2018; Anas and Abdulrahman, 2021). The participants issued with questionnaire and interviewed were primarily composed of females of different ages, social and cultural backgrounds, and who were known to use or sell aphrodisiac plant recipes. Participants were selected according to their profound expertise in the utilization of aphrodisiac herbs. Prospective participants were comprehensively apprised of the study's importance, and only those who voluntarily consented were included in the research. The interview protocols adhered to the Code of Ethics established by the International Society for Ethnobiology (ISE, 2006).

2.3 Data Collection

A total of 700 self-administered questionnaires were provided to Argungu (100), Yauri (100), Zuru (100) and Gwandu (400) Local Government Areas respectively. The questionnaire includes inquiries about the local name of plants, the parts utilized, method of preparation and administration, the effectiveness, side effects, and frequency of aphrodisiacs use. A literature search for the aphrodisiac properties of the plants mentioned by the participants was carried out using Google Scholar, PubMed, Web of science, and Scopus in order to gather reports of published research on the plants. Plant samples were collected and processed for authentication.

2.4 Plant Collection and Identification

Plant samples were collected and authenticated by a botanist. Voucher specimens were deposited in the Herbarium of Kebbi State University of Science and Technology, Aliero, Kebbi State, Nigeria, for future reference. The plant names were verified using the World Flora (theworldfloraonline.org.) and PlantNet applications.

2.5 Data Analysis

The data obtained from the questionnaires were compiled and subjected to descriptive statistical analysis. The ethnobotanical variables were quantified and expressed as frequencies and percentages utilizing the Microsoft Excel software package.

2.6 Ethical Consideration

The Kebbi State University of Science and Technology's University Research Ethics Committee granted ethical permission for the present study (Reference No. KSUSTA/DVCR&I/RECC/008) in Aliero, Nigeria. The appropriate traditional authority verbally allowed access to the research regions prior to data collection. Informed consent, which was obtained from each participant before they participated in the interviews and completed the questionnaires, was a stringent requirement for participation.

3. Results

3.1 Demographic Characteristics of the Study Participants

Out of 700 questionnaires distributed, a total of 544 questionnaires were collected from participants, all of whom were females (100%). The survey revealed that the largest portion of participants, comprising 54.22% of the total, fell within the 20-30 age range. A substantial 96% were married, and an overwhelming majority, 83.27%, had received formal education. Furthermore, 93.01% of the participants identified as indigenous Hausa/Fulani tribes, while 86.95% practiced the Islam faith (Table 1). And all the responses received from the four emirates, Gwandu emirate recorded the highest response rate (Figure 2).

Table 1: Socio-demographic characteristics of the participants

Demographic Bio data		Frequency of Citation	Percentage (%)
Gender	Female	544	100
Age	20-30	295	54.22
Distribution (Years)	31-40	160	29.41
	41-50	89	16.36
	51-60	0	0.00
Marital Status	Married	524	96.32
	Divorced	1	0.18
	Single	16	2.94
	Widowed	3	0.55
Educational Background	Literate	453	83.27
	Illiterate	91	16.73
Ethnic Group	Hausa/Fulani	506	93.01
	Yoruba	24	4.41
	Igbo	14	2.57
Religion	Christians	71	13.05
	Muslims	473	86.95
	Others	0	0

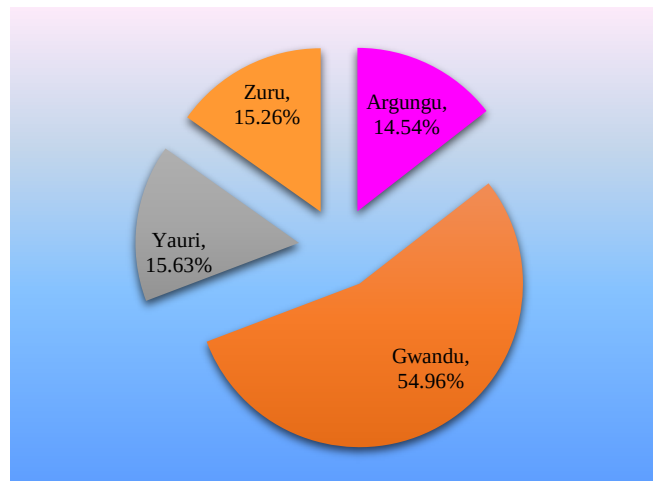


Figure 2: Percentage response in each Emirate of Kebbi State.

3.2 Documented Plant Species and Taxonomic Diversity

This study documented the utilization of 48 aphrodisiac plant species, from 29 families, within traditional recipes by the inhabitants of Kebbi State. The most abundant taxa reported from these plants constitute Fabaceae and Moraceae families (Figure 3).

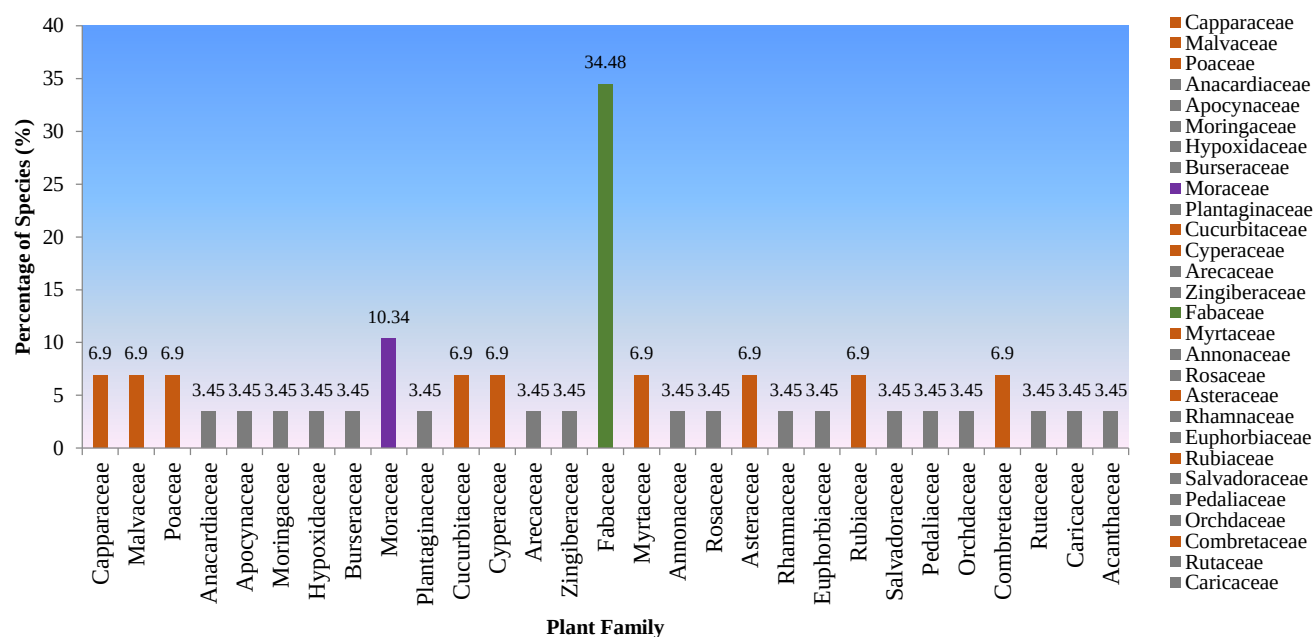


Figure 3: Distribution of known aphrodisiac plants by family in Kebbi State, Nigeria.

Table 2 lists the documented plant species, detailing their botanical and family names, common and local names, parts utilized, voucher specimen number, frequency of citation, ethnobotanical applications, preparation methods, modes of administration and validated pharmacological uses. This study identified the most prevalent aphrodisiac plants species, based on citation frequency and use were *Ziziphus mauritiana* Lam.,

Azanza garckeana (F.Hoffm.) Exell & Hillc., *Salvadora persica* Linn., *Crotalaria arenaria* R. Br., *Albizia chevalieri* A.Chev and *Boscia senegalensis* (Lam.) Poir (Figure 4). Furthermore, literature review shows that a total of 27 plants species documented in this study have been pharmacologically validated to have aphrodisiac activity.

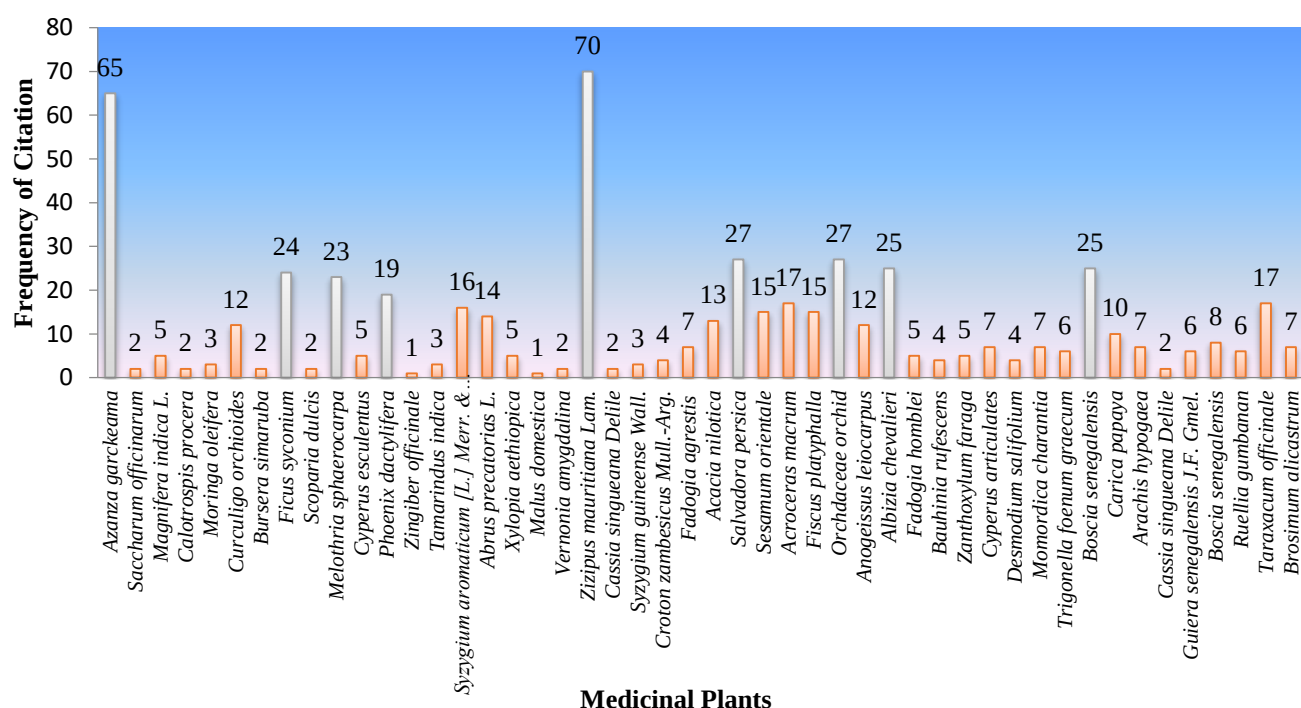


Figure 4: Medicinal plants species most frequently cited as aphrodisiacs recipes in Kebbi State, Nigeria.

Table 2: Inventory medicinal plants used as aphrodisiacs in Kebbi State, Nigeria.

Botanical Name	Family	Common Name	Local Name (Hausa/Fulani)	PP U	VN	F C	Traditional Uses	Method of Preparation	Mode of Administration	Validated Pharmacological Uses/Importance
<i>Azanza garckeana</i>	Malvaceae	Snot-apple	<i>Goron tula</i>	F	KSUSTA/PSB/H/ No:200A	65	Boosting libido and wetness, improves sexual performance	Dried fruit boiled in water, add honey (syrup).	Drinking (One spoon), Insertion	Infertility, cough, chest pains etc (Yusuf <i>et al.</i> , 2020; Nurudeen <i>et al.</i> , 2023)
<i>Saccharum officinarum</i> L.	Poaceae	Sugar Cane (Brown sugar)	<i>Mazarkwaila, Rake</i>	J	KSUSTA/PSB/H/ No:2371A	2	Increases wetness	Dough	Drinking	Anti (malaria, obesity, oxidant etc) (Miraj, 2016).
<i>Mangifera indica</i> L.	Anacardiaceae	Mango	<i>Mangwaro</i>	SB	KSUSTA/PSB/H/ No:63	5	Wetness, boost libido	Dried stem bark boiled with spices (syrup)	Taken one tea cup.	Anti (diabetic, oxidant, viral etc) (Shah <i>et al.</i> , 2010; Masud Parvez, 2016).
<i>Calotropis procera</i> [Ait.] R. Br.	Apocynaceae	Sodom apple	<i>Tunfafiya</i>	F	KSUSTA/PSB/H/ No:003	2	Wetness, boost libido	Mixed powder	Chewing	Antidote, rheumatic pains, antitumor etc (Murti <i>et al.</i> , 2010; Habeeb <i>et al.</i> , 2024).
<i>Moringa oleifera</i>	Moringaceae	Moringa	<i>Zogale,</i>	L	KSUSTA/PSB/H/ No:121	3	Solve intimate problems, wetness, boost libido	Mixed powder	Drinking	Cure wounds, cancer, ulcers, heart and liver diseases (Pareek <i>et al.</i> , 2023).
<i>Curculigo orchoides</i>	Hypoxidaceae	Golden eye grass	<i>Tuntuben harshe</i>	SB, R	KSUSTA/PSB/H/ No:22A	12	Boosting libido, Solve intimate problems	Dough, Syrup	Drinking, Insertion and Chewing	Aphrodisiac Agent, asthma, piles cough etc (Kushalan <i>et al.</i> , 2023).
<i>Bursera simaruba</i> (L.) Sarg	Burseraceae	Gumbo-limbo	<i>Bitamakewayi</i>	L	KSUSTA/PSB/H/ No:54	2	Wetness	Dough	Drinking	Aphrodisiac Agent, pain killer (Singh <i>et al.</i> , 2012).
<i>Ficus syconium</i>	Moraceae	Fig	<i>Baure</i>	F, SB	KSUSTA/PSB/H/ No:2520	24	Boosting libido and wetness	Boiled stem back in water	Sitz bath	Anti(bacterial, oxidant etc) (Tijjani <i>et al.</i> , 2018).
<i>Scoparia dulcis</i> L.	Plantaginaceae	Sweet-broom	<i>Zaki</i>	L	51A	2	Boosting libido, wetness	Mixed powder, Syrup	Drinking	Anti(diabetic, oxidant, viral etc) (Lin <i>et al.</i> , 2023).
<i>Melothria sphaerocarpa</i> (Cogn.) H. Schaeff.	Cucurbitaceae	Minannas	<i>Minannas</i>	L, S	KSUSTA/PSB/H/ No:6A	23	Wetness, Boost libido and sexual urge	Dough	Insertion, Drinking	Production of cooking oil, paint, biodiesel (Houdegbe <i>et al.</i> , 2016).
<i>Cyperus esculentus</i>	Cyperaceae	Tiger nuts	<i>Aya</i>	S	KSUSTA/PSB/H/ No:15	5	Wetness, Boost libido	Grinded seeds, mixed with	Taken with milk or yoghurt	Improves sperm count, antidote (Allouh <i>et al.</i> , 2015).

								peanut, dates.		
<i>Phoenix dactylifera</i>	Arecaceae	Dates	<i>Dabino</i>	F	KSUSTA/PSB/H/ No:200A	19	Solve intimate problems, wetness, boost libido	Grinded fruit, mixed with tiger nut powder (dough)	Taken with milk or yoghurt.	Improves male infertility (Bahmanpour <i>et al.</i> , 2006).
<i>Zingiber officinale</i> Rosc.	Zingiberaceae	Ginger	<i>Citta</i>	R	KSUSTA/PSB/H/ No:2981	1	Wetness	Syrup	Drinking	Aphrodisiac agent (Anandita <i>et al.</i> , 2012).
<i>Tamarindus indica</i>	Fabaceae	Tamarind	<i>Tsamiya</i>	F	KSUSTA/PSB/H/ No:66	3	Wetness	Syrup	Drinking	Aphrodisiac agent (Rai <i>et al.</i> , 2018).
<i>Syzygium aromaticum</i> [L.] Merr. & L.M. Perry	Myrtaceae	Cloves	<i>Kanunfari</i>	S	KSUSTA/PSB/H/ No:2331	16	Solve intimate problems, wetness, boost libido	Grinded seeds mixed with other herbs.	Taken with yoghurt.	Aphrodisiac agent, antimicrobial (Yilmaz-Oral <i>et al.</i> , 2020).
<i>Abrus precatorius</i> L.	Fabaceae	Rosary pea	<i>Idon zakara</i>	S	KSUSTA/PSB/H/ No:2832	14	Solve intimate problems, wetness, boost libido	Grinded seeds mixed millet (dough)	Taken with milk or yoghurt.	Fertility enhancing agent (Ogbuehi <i>et al.</i> , 2015)
<i>Xylopia aethiopica</i>	Annonaceae	Negro pepper	<i>Kimba</i>	S	KSUSTA/PSB/H/ No:229A	5	Wetness	Dough	Drinking	Anti(sterility, microbial etc) (Erhirhie and Moke, 2014).
<i>Malus domestica</i>	Rosaceae		Apple	F	KSUSTA/PSB/H/ No:3001A	1	Boost libido	Syrup	Drinking	Anti(microbial, depressant) (Lobo <i>et al.</i> , 2018).
<i>Vernonia amygdalina</i>	Asteraceae		<i>Makale mata</i>	SB	KSUSTA/PSB/ H/ No:48A	2	Boosting libido	Dough, Syrup	Drinking	Fertility inducer (Farombi and Owuoye, 2011).
<i>Ziziphus mauritiana</i> Lam.	Rhamnaceae	Jujube	<i>Magarya</i>	L	KSUSTA/PSB/H/ No:258	70	Wetness, improves sexual urge	Dried leaves boiled in water	Sitz bath/Insertion	Relieves stress, anxiety, depression etc (Goyal <i>et al.</i> , 2012).
<i>Cassia singueana</i> Delile	Fabaceae	Sticky pod	<i>Runhu</i>	L, SB	KSUSTA/PSB/H/ No:2507	2	Wetness, Boost libido	Dough	Drinking	Treat venereal diseases, cure impotence caused by diabetes (Osunga <i>et al.</i> , 2023).
<i>Syzygium guineense</i> (Wild.) DC.	Myrtaceae	Water berry	<i>Malmo</i>	L, F	KSUSTA/PSB/H/ No:330	3	Increases pleasure	Fresh fruits	Lick the fruit	Stomachache, infertility (Dharani, 2016).

<i>Croton zambesicus</i> Mull.-Arg.	Euphorbiaceae	Koriba	<i>Koriba</i>	L, R	KSUSTA/PSB/H/ No:8A	4	Boost libido	Mixed with other condiments and spices	Drinking, mixed with food.	Antioxidant activity (Ibrahim <i>et al.</i> , 2022).
<i>Fadogia agrestis</i>	Rubiaceae	Black aphrodisiac	<i>Baakin gagai</i>	F	KSUSTA/PSB/H/ No:822A	7	Sexual stimulation	Ripe fruit	Suck the fruit	Purported aphrodisiac agent in males (Yakubu <i>et al.</i> , 2005).
<i>Acacia nilotica</i> Linn.	Fabaceae	Gum Arabic tree	<i>Bagaruwa</i>	S	286	13	Boosting libido and wetness	Grinded seeds, mixed with some oils (paste)	Inserting into the vagina, 2-4 mins then wash it off.	Treat sexual dysfunctions (Tariq and Taj al, 2010).
<i>Salvadora persica</i>	Salvadoraceae	Miswak (toothbrush)	<i>Aswakin mata</i>	SB	KSUSTA/PSB/H/ No:176A	27	Boosting libido and wetness	Grinded stem stick, mixed with millet and spices.	Taken with Milk	Antifertility activity (Darmani <i>et al.</i> , 2003).
<i>Sesamum orientale</i>	Pedaliaceae	Benni seeds	<i>Ridi</i>	S	KSUSTA/PSB/H/ No:58A	15	Wetness	Grinded seeds, mixed with rice powder and spices	Taken with yoghurt or milk	Antioxidant activity, promotes fertility (Mariod <i>et al.</i> , 2017).
<i>Acroceras macrum</i>	Poaceae	Nile grass	<i>Geron tsuntsaye (mata)</i>	S	KSUSTA/PSB/H/ No:243	17	Boosting libido and wetness	Grinded seeds, mixed with millet (dough)	Taken with milk or yoghurt.	Nil
<i>Ficus platyphalla</i>	Moraceae	Gutta-percha tree	<i>Gamji</i>	SB	KSUSTA/PSB/H/ No:292	15	Wetness	Grinded powder	Taken with milk or yoghurt.	Promotes fertility (Ugwah-Oguejiofor <i>et al.</i> , 2011).
<i>Orchdaceae</i>	Orchdaceae	Orchid	<i>Manta-uwa</i>	L	330A	27	Wetness, boost libido	Grinded leaves mixed with other powdered herbs	Taken with yoghurt, Insertion	Possess curative and aphrodisiac properties (Hossain, 2011; Lalrosangpuui, 2021).
<i>Anogeissus leiocarpus</i>	Combretaceae	Chewstick/axle wood tree	<i>Marke</i>	SB	KSUSTA/PSB/H/ No:512	12	Solve intimate problems, wetness, boost libido	Grinded stem back	Taken with yoghurt.	Promising natural agent in erectile dysfunction management (Ademosun <i>et al.</i> , 2019).
<i>Albizia chevalieri</i>	Fabaceae	White siris (silk tree)	<i>Katsari</i>	L	KSUSTA/PSB/H/ No:43A	25	Solve intimate problems,	Grinded leaves powder	Taken with milk or yoghurt.	Anti-oxidant activity with a significant hypoglycemic effect (Aliyu <i>et al.</i> , 2009)

							wetness, boost libido			
<i>Fadogia agrestis</i> (Schweinf. Ex Hiern)	Rubiaceae	Black aphrodisiac	<i>Bakin gagai</i>	SB	KSUSTA/PSB/H/ No:822A	5	Wetness	Grinded stem bark mixed with other herbs	Taken with milk or yoghurt.	Used to modify impaired sexual functions in animals, arising from hypotestosteronemi (Yakubu <i>et al.</i> , 2005).
<i>Bauhinia rufescens</i>	Fabaceae	Silver butterfly tree	<i>Matsattsagi</i>	L	KSUSTA/PSB/H/ No:253	4	Wetness	Grinded leaves mixed with other herbs	Taken with milk or yoghurt.	Antisalmonella and Antioxidant Activity (Djenguemtar <i>et al.</i> , 2022).
<i>Zanthoxylum fagara</i> (L.) Sarg. (Syn.	Rutaceae	Senegal prickly ash	<i>Fasa Kwari</i>	SB	KSUSTA/PSB/H/ No:111A	5	Wetness	Grinded stem bark, mixed with rice powder.	Taken with milk or yoghurt.	For treating diarrhea, cardiac disorders, fever and many types of pains such as ear and muscle pain and toothaches (Okagu <i>et al.</i> , 2021)
<i>Cyperus articulatus</i>	Cyperaceae	Fragrant flatsedge	<i>Tazargade, Kajiji</i>	SB	KSUSTA/PSB/H/ No:355A	7	boost libido	Grinded stem bark	Taken with milk or yoghurt.	Hepatoprotection, contraception, anticonvulsant, antioxidant activity (Dhar <i>et al.</i> , 2024).
<i>Desmodium salicifolium</i> (Poir.) DC.	Fabaceae	Tick trefoil	<i>Madaddafi</i>	WP	KSUSTA/PSB/H/ No:267	4	Wetness, Boost libido	Grinded whole stem bark	Taken with milk or yoghurt.	Antifungal activity (Aphalaine <i>et al.</i> , 2022).
<i>Momordica charantia</i>	Cucurbitaceae	Bitter melon	<i>Garafuni</i>	WP	KSUSTA/PSB/H/ No:522	7	Wetness, Boost libido	Grinded whole plant, boiled in water	Sitz bath	Antioxidant, antidiabetic, anticancer, antifertility, antimicrobial, hepatoprotective activity (Basch <i>et al.</i> , 2003).
<i>Trigonella foenum graecum</i>	Fabaceae	Fenugreek	<i>Hulba</i>	S	KSUSTA/PSB/H/ No:120A	6	Wetness, Boost libido	Grinded seeds, mixed with other spices	Taken with milk or yoghurt	Potent aphrodisiac agent (Ray <i>et al.</i> , 2024).
<i>Boscia senegalensis</i>	Capparaceae		<i>Anza</i>	L, F	KSUSTA/PSB/H/ No:144	25	Solves intimate problem	Dried leaves boiled in water. Ripe fruits	Drinking, Chewing of fruits	Cough, antimalaria, bilhazia, sexually transmitted infection (Maroyi, 2019).
<i>Carica papaya</i>	Caricaceae	Pawpaw	<i>Gwanda, Babbar mace</i>	F, S	KSUSTA/PSB/H/ No:2740	10	Wetness	Dried seeds powder	Chewing of fruits	Antiseptic, contraceptive and

								mixed with food		antimicrobial properties (Srivastava and Singh, 2016).
<i>Arachis hypogaea</i>	Fabaceae	Peanut	<i>Gyadar mata</i>	S	KSUSTA/PSB/H/ No:2991	7	Tightening	Grinded seeds, mixed with tiger nut, dates.	Taken with milk or yoghurt	Antioxidant, antimicrobial, antiparasitic, analgesic agent (Al-Snafi, 2014).
<i>Cassia singueana</i> Delile	Fabaceae	Sticky pod	<i>Runhu</i>	L, SB	KSUSTA/PSB/H/ No:2507	2	Wetness, Boost libido	Dough	Drinking	Antioxidant and antimicrobial activity (Adedoyin <i>et al.</i> , 2019).
<i>Guiera senegalensis</i> J.F. Gmel.	Combretaceae	Wild coffee	<i>Sabara</i>	L	KSUSTA/PSB/H/ No:48	6	Wetness	Mixed with Spices (dough)	Drinking	Respiratory and gastrointestinal disorders, microbial and parasitic infections (Dirar and Devkota, 2020).
<i>Buchholzia coriacea</i> Gilg	Capparaceae		<i>Goron ban mamaki</i>	L, F	KSUSTA/PSB/H/ No:102	8	Solves intimate problem	Dried leaves boiled in water. Ripe fruits	Drinking, Chewing of fruits	Aphrodisiac use, treatment of oedema and rheumatism (Khalid <i>et al.</i> , 1992).
<i>Ruellia gumbanensis</i>	Acanthaceae	Gumban yasin	<i>Gumban yashin</i>	L, FL	KSUSTA/PSB/H/ No:345	6	Boost libido/pleasure	Powder	Chewing	Nil
<i>Taraxacum officinale</i> (G. H. Weber ex Wiggers)	Asteraceae	Dandelion	<i>Dandurumi</i>	L, R	KSUSTA/PSB/H/ No:666	17	Wetness, Boost libido/sexual urge	Mixed with food	Taken with food, Insertion	Anti(bacterial, arthritic, diabetic, obesity, oxidant and cancer effects) (Di Napoli and Zucchetti, 2021).
<i>Brosimum alicastrum</i>	Moraceae	Maya nut, bread nut	<i>Romon fada</i>	S, L	KSUSTA/PSB/H/ No:2900A	7	Increases performance and pleasure	Dough	Drinking	Nutritional and antioxidant properties (Losoya-Sifuentes <i>et al.</i> , 2023).

Abbreviations: PPU- Plant Parts Used, VN- Voucher Number, FC- Frequency of Citation, R-Root, S-Seed, SB-Stem Bark, L-Leaves, FL-Flower, F-Fruits.

3.3 Plant Parts Used, Mode of Preparation

The plant components most frequently utilized in aphrodisiac herbal treatments are ranked in the following order: leaves

stem bark, fruits, seeds, roots, whole plant, and flower/juice (Figure 5). The predominant method of preparing and administering these remedies is in dough form (Figure 6).

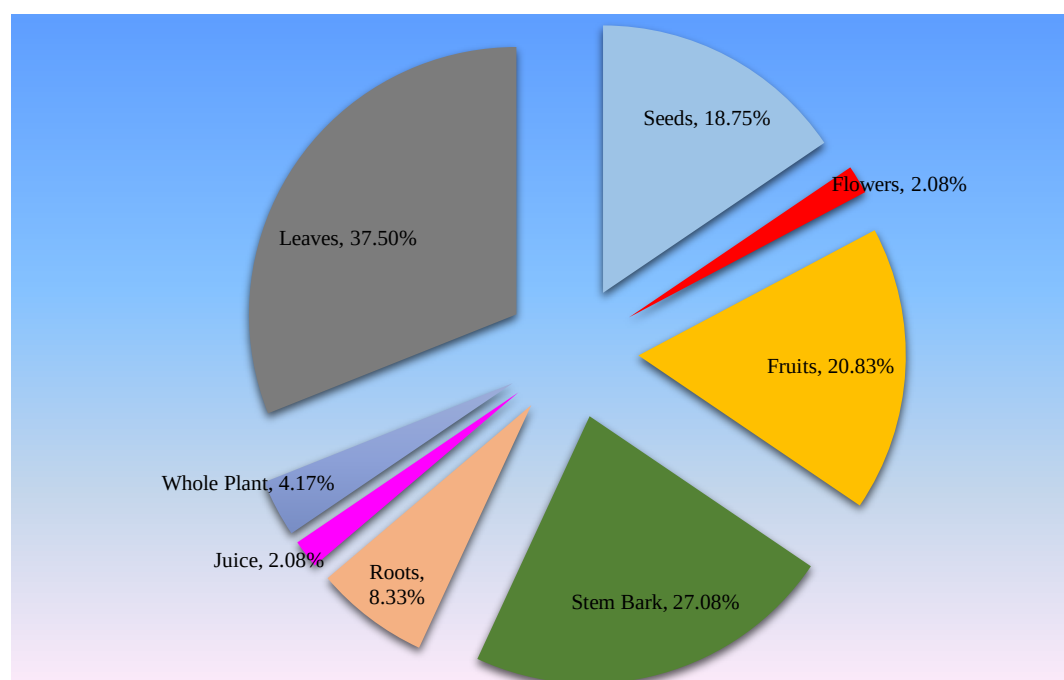


Figure 5: Plants parts used as aphrodisiac recipes in Kebbi State, Nigeria.

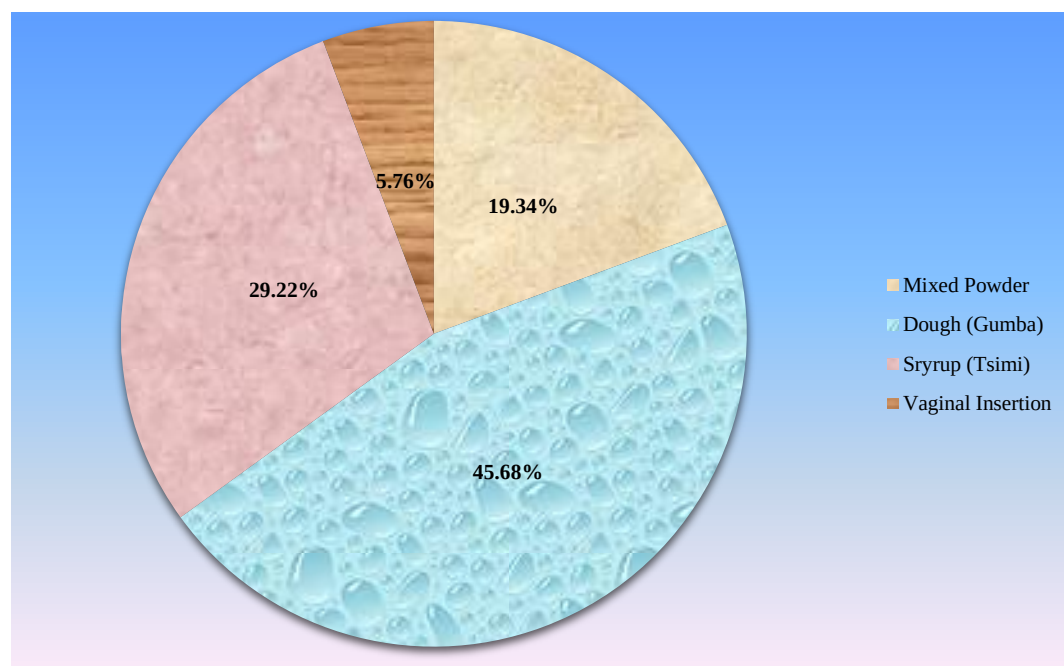


Figure 6: Aphrodisiac recipe preparation types.

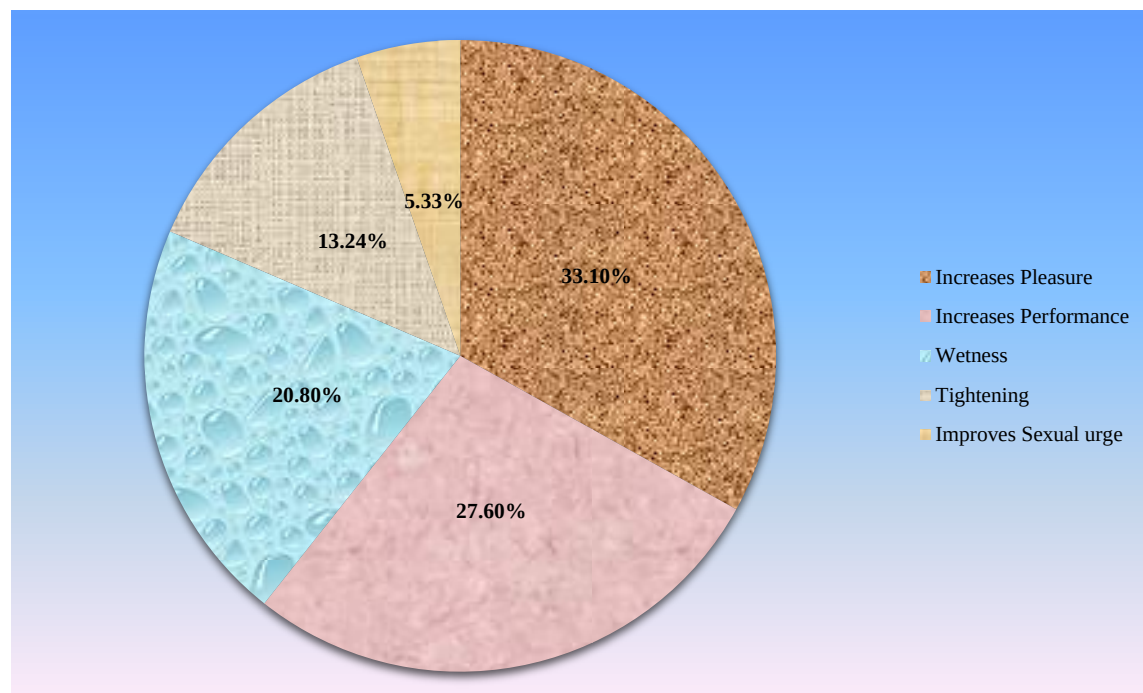
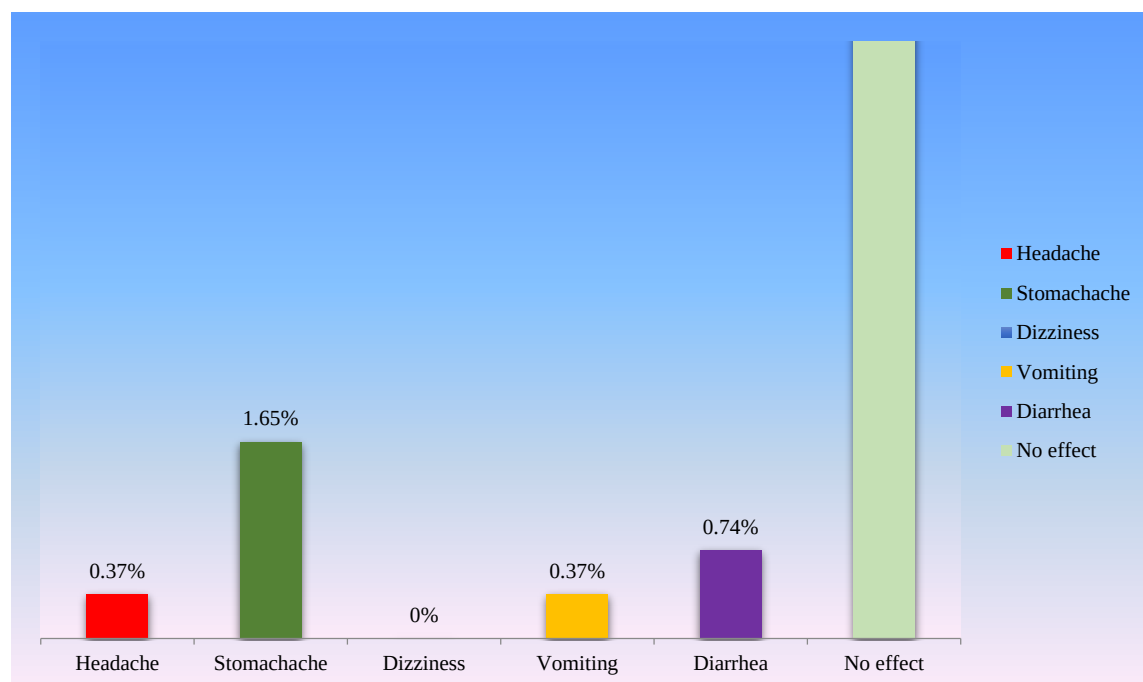
3.4 Benefits and Side Effects of Aphrodisiac Recipes

The satisfaction derived from the use of herbal aphrodisiacs was rated as excellent, very good, and good by the majority of participants, with 51.47% reporting frequent usage (Table 3). The reported enhancements in sexual satisfaction include a

boost in sexual pleasure, increased libido, and improved wetness and lubrication (Figure 7). Prevalent side effects documented were stomach ache (1.65%) and diarrhea (0.74%) (Figure 8).

Table 3: Satisfaction and frequency of herbal aphrodisiacs use

Participants Comments		Frequency of Use/Satisfaction	Percentage (%)
Comments on Usage Satisfaction	Excellent	133	24.45
	Very Good	160	29.41
	Good	138	25.37
	Fair	14	2.57
	Bad	0	0
	No comment	99	18.20
Frequency of Usage	Always	280	51.47
	Sometimes	185	34.01
	No response	79	14.52

**Figure 7:** Benefits of aphrodisiac recipes to participants**Figure 8:** Reports on side effects of aphrodisiac recipes

4. Discussion

Ethnopharmacological studies of medicinal plants are essential for the discovery of new phytochemicals from unknown or taxonomically under-researched species (Abubakar *et al.*, 2020; Mukti, 2024). The pursuit of botanical derivatives for use as dietary supplements is largely driven by the growing consumer and scientific preference for treatments with minimal side effects. Ethnobotanical practices in Kebbi State concerning the use of medicinal plants as aphrodisiacs recipes exhibit significant parallels with those reported in other Nigerian regions, such as Sokoto (Erhenhi and Obadoni, 2015), Bauchi (Sabo *et al.*, 2018), Edo (Adebisi and Alebiosu, 2014; Batcho *et al.*, 2020), and Akwa-Ibom (Adebajo *et al.*, 2020), as well as within wider African contexts.

The predominance of the Fabaceae and Moraceae families documented in this study is consistent with existing ethnobotanical literature, which frequently reports these taxa as significant sources of medicinal plants (Asiimwe *et al.*, 2021; Ukwuani-Kwaja *et al.*, 2024; Tukur *et al.*, 2024). Notably, the Fabaceae family, recognized as the world's third-largest, is acknowledged for its considerable ethnobotanical importance among both indigenous and urban populations globally (Appiah *et al.*, 2019). The abundance of phytochemicals including flavonoids, tannins, saponins, anthocyanins, alkaloids, and terpenes in species of the Fabaceae and Moraceae has been linked to their therapeutic potential, owing to the documented bioactivity of the compounds (Lifongo *et al.*, 2014; Basnett *et al.*, 2023; Tukur *et al.*, 2024). This phytochemical profile may account for the reported use of these plants in aphrodisiac preparations within the present study. Furthermore, the prevalence of Fabaceae species in such applications may be attributed to their widespread availability, as many species within this family exhibit perennial growth habits and adaptations that enable resilience to arid conditions (Kankara *et al.*, 2015).

This study documented the utilization of leaves, stem bark, fruits, seeds, and roots in aphrodisiac preparations. The prevalence of leaves, as observed in this and previous research can be attributed to their high regenerative capacity, efficacy, ease of harvest, and their role as primary sites for photosynthetic and biosynthetic activity, which facilitates the accumulation of bioactive compounds (Regolo *et al.*, 2024). This preference for foliar parts also supports conservation efforts by mitigating the threat of species extinction associated with the harvesting of roots or other destructive practices (Asiimwe *et al.*, 2021). Furthermore, leaves and stem bark are recognized as principal sites for the synthesis and storage of secondary metabolites, which are largely responsible for a plant's biological activity (Abdulrahman *et al.*, 2018). The methods of preparation and administration reported in this study are consistent with those described in recent ethnopharmacological investigations (Asiimwe *et al.*, 2021; Brahimi *et al.*, 2022).

Vaginal wetness, an estrogen-mediated physiological process, serves as a key indicator of genital arousal and mucosal integrity in female sexual response (Munarriz *et al.*, 2002). A woman's experience of vaginal lubrication can influence her own sexual experience as well as that of her partner. The use of aphrodisiacs by most participants in this study has presented

a high level of satisfaction as it stimulates their sexual urge and influences that of their partners. These observations align with established research indicating that adequate vaginal lubrication constitutes a fundamental aspect of female sexual arousal and shows direct correlation with subjective measures of sexual satisfaction and pleasure (Handy and Meston 2020; O'Dwyer *et al.*, 2023).

Vaginal tightness is a concern that many sexually active women are interested in, especially those who have experienced the physical changes associated with childbirth. This interest is often driven by the desire to enhance sexual satisfaction and intimacy. A variety of medicinal plants have been identified in traditional practices as potential remedies for vaginal tightening. Among these, *Biorhiza pallida*, *Nigella sativa*, and *Acacia nilotica* have garnered attention for their reported benefits (Nahid Lorzadeh *et al.*, 2016; Roozbeh and Darvish, 2016; Andriana *et al.*, 2017). Despite this, it is important to note that there exists a significant lack of pharmacological evidence substantiating the efficacy of these plants in promoting vaginal tightening. The present study highlights this gap in research while demonstrating that a number of participants express a positive anecdotal experience with the use of these remedies for vaginal tightening. Furthermore, it is well-documented that the sexual urge or libido in parous women tends to decrease over time, a phenomenon that is especially pronounced in those approaching menopause. This decline in sexual desire can be attributed to a range of factors, including hormonal imbalances and increased stress levels, which are common during this life stage. These changes frequently impair a woman's quality of life and disrupt the functioning of her intimate relationships. Moreover, numerous plants have been traditionally claimed to enhance sexual drive and boost libido (Chauhan *et al.*, 2014; Sha'ari *et al.*, 2021). As observed in the present study, while many women report a noticeable restoration of their sexual drive, there remains a critical need for scientific validation of these claims. Establishing a robust body of evidence regarding the effectiveness of these botanical interventions could significantly contribute to the overall understanding of female sexual health.

Aphrodisiacs have been shown to interact with pharmaceuticals, potentially causing side effects such as confusion, agitation, anxiety, headache, and hypnotic effects, which may reduce medication effectiveness (Brunetti *et al.*, 2020). The National Agency for Food and Drug Administration and Control (NAFDAC) cautions that certain aphrodisiac formulations incorporate chemical constituents with deleterious effects on vital organs, particularly the hepatic and renal systems (Sundarami *et al.*, 2021). The comparatively higher patronage of natural aphrodisiacs is largely attributable to their perceived advantages over synthetic drugs, including a superior safety margin, greater affordability, and potential therapeutic benefits (Brunetti *et al.*, 2020). The side effects of using aphrodisiac recipes showcased in this study could be attributed the harmful effects of such chemical components utilized as herbal preparations. Existing literature indicates that the unverified use of medicinal plants in traditional remedies can induce significant adverse toxicological effects (Hassan *et al.*, 2020; Okaiyeto and Oguntibeju, 2021; Mugale *et al.*, 2024). Consequently, there is a critical need to

systematically document and scientifically evaluate these plants to elucidate and communicate potential health risks.

5. Conclusion

In conclusion, all the plants included in this study have been utilized either individually or as part of polyherbal formulations to achieve the desired aphrodisiac effects. A total of twenty-seven (27) plant species documented here have undergone pharmacological validation for their aphrodisiac potential; however, comprehensive toxicological assessments remain insufficient. It is crucial to rigorously validate the traditional claims surrounding these novel plants, as this could lead to a deeper understanding of their therapeutic efficacy. Furthermore, investigating and identifying the bioactive compounds responsible for the aphrodisiac properties of these plants may uncover new and effective agents for enhancing sexual health and function. This research could significantly contribute to both traditional medicine and modern pharmacology.

Declarations

The authors affirm that the work presented in this manuscript is entirely original, and they accept full responsibility for any claims that may arise concerning its content.

Competing interests

The authors declare no conflict of interest.

Author contributions: Author ANUK got the concept and designed the study. Author NMS, RSM, HM, IS, IMS, EP, BS and AI participated in the data collection. Authors ANUK, UDN drafted the manuscript and participated in data analysis. Authors ANUK and UDN critically reviewed and revised the manuscript for important intellectual content. All authors read through the final version of the manuscript and gave consent for its publication.

Acknowledgements

The authors gratefully acknowledge the valuable contributions of the Nigerian Tertiary Education Trust Fund (TETFUND) for funding this research. This study draws upon the rich traditional knowledge of some rural communities in the four emirates of Kebbi State, Nigeria, whose insights into the use of medicinal plants as aphrodisiacs have been developed and preserved over the years. The documentation presented herein would not have been possible without their generous sharing of this longstanding ethnobotanical expertise.

References

- Abdulrahman, M. D., Ali, A. M., Fatihah, H., Khandaker, M. M. and Mat, N. (2018). Traditional medicinal knowledge of Malays in Terengganu, Peninsular Malaysia. *Malayan Nature Journal*, 70(3): 349–364. ResearchGate article
- Abubakar, I. B., Ukwuani-Kwaja, A. N., Garba, A. D., Singh, D., Malami, I., Salihu, T. S., Abubakar, A. and Muhammad, A. (2020). Ethnobotanical study of medicinal plants used for cancer treatment in Kebbi State, North-west Nigeria. *Acta Ecologica Sinica*, 40: 306–314. doi.org/10.1016/j.chnaes.2020.02.007
- Adamu, H., Adamu, A. A., Cletus, B., Marafa, L. and Abdulmalik, M. (2022). Prevalence and pattern of aphrodisiac use among adult population in Sokoto Metropolis, Northwest Nigeria. *International Journal of Research and Reports in Gynaecology*, 5(1): 265–276. International Journal of Research and Reports in Gynaecology article
- Adebajo, A. C., Nwafor, P. A., Genesis, E. U., Okoh, O. O., Ezeanya, C. U. and Chukwuemeka, A. U. (2020). Evaluation of aphrodisiac activities of four Nigerian ethnomedicinal plants. *Annals of Complementary and Alternative Medicine*, 2(1): 1009. Annals of Complementary and Alternative Medicine article
- Adebisi, I. M. and Alebiosu, O. C. (2014). A survey of herbal abortifacients and contraceptives in Sokoto, North-West Nigeria. *International Journal of Current Research in Chemistry and Pharmaceutical Sciences*, 1: 81–87. Semantic Scholar entry
- Adedoyin, B., Muhammad, A., Dangoggo, S. M., Rabah, A., Sharples, G., Nahar, L. and Sarker, S. (2019). *Chemical composition and bioactivity of the essential oil of Cassia singueana flowers growing in Nigeria*. *Pharmaceutical and Biomedical Research*, 5(3): 1–7. doi.org/10.18502/pbr.v5i3.2110
- Ademosun, A. O., Adebayo, A. A. and Oboh, G. (2019). *Anogeissus leiocarpus* attenuates paroxetine-induced erectile dysfunction in male rats via enhanced sexual behavior, nitric oxide level and antioxidant status. *Biomedicine & Pharmacotherapy*, 111: 1029–1035.
- Aliyu, A. B., Musa, A. M., Ibrahim, M. A., Ibrahim, H. and Oyewale, A. O. (2009). Preliminary phytochemical screening and antioxidant activity of leave extract of *Albizia chevalieri* Harms (Leguminosae-Mimosoideae). *Bayero Journal of Pure and Applied Sciences*, 2(1): 149–153. doi.org/10.4314/bajopas.v2i1.58533
- Allouh, M. Z., Daradka, H. M. and Abu Ghaida, J. H. (2015). Influence of *Cyperus esculentus* tubers (tiger nut) on male rat copulatory behavior. *BMC Complementary and Alternative Medicine*, 15: 331. doi.org/10.1186/s12906-015-0851-9.
- Al-Snafi, A.E. (2014). Chemical constituents and pharmacological activities of *Arachis hypogaea*. *International Journal of Pharmaceutical Research Scholars*, 3(1-1): 615–623. ResearchGate article
- Anandita, D. W., Nuraila, S. and Pramono, S. (2012). Aphrodisiac effects of red ginger (*Zingiber officinale* Rosc. Red Clone) essential oil and essential oil free ethanolic extract in male rats. *Traditional Medicine Journal*, 17(1): 8–14. Traditional Medicine Journal article
- Anas, A. and Abdulrahman, M. D. (2021). Ethnomedicinal survey of plants used for management of inflammatory diseases in Ringim Local Government, Jigawa State, Nigeria. *Ethnobotany Research and Applications*, 22: 47, 1–27. Ethnobotany Research and Applications article
- Andriana, K. and Lestari, D. Y. (2017). *Effect of extract black cumin (Nigella sativa) on the vaginal cytology of ovariectomized white mouse (Rattus norvegicus strain Wistar)*. In *Proceedings of the Health Science International Conference (HSIC 2017)*, *Advances in Health Sciences Research*, 2: 357–361. https://doi.org/10.2991/hsic-17.2017.55.
- Ango, U. M., Oche, M. O., Bello, M. M., Yunusa, E. U., Umar, M. T., Adamu, A., Isa, B. and Gajida, A. U. (2021). Sexual stimulants: Prevalence and associated factors amongst married women in Sokoto Metropolis, Sokoto State,

- Nigeria. *Archives of Current Research International*, 21(1):24–33.
<https://doi.org/10.9734/acri/2021/v21i130224>
- Aphalaine, P. T. D., Paul, E., Borice, T. T., Roland, T. T. and Jonathan, G. (2022). Constituents of *Desmodium salicifolium* (Poir.) DC (Fabaceae) with antifungal activity. *Journal of Phytology*, 50: 100–105. doi.org/10.1016/j.phytol.2022.05.013 .
- Appiah, K. S., Oppong, C. P., Mardani, H. K., Omari, R. A., Kpabitey, S., Amoatey, C. A., Onwona Agyeman, S., Oikawa, Y., Katsura, K., & Fujii, Y. (2019). Medicinal plants used in the Ejisu-Juaben Municipality, southern Ghana: An ethnobotanical study. *Medicines*, 6(1): 1. doi.org/10.3390/medicines6010001
- Asiimwe, S., Namukobe, J., Byamukama, R. and Imalingat, B. (2021). Ethnobotanical survey of medicinal plant species used by communities around Mabira and Mpanga Central Forest Reserves, Uganda. *Tropical Medicine and Health*, 49: 52. doi.org/10.1186/s41182-021-00341-z .
- Asogwa, B. C., Umeh, J. C. and Okwoche, V. A. (2012). Poverty and efficiency among the farming households in Nigeria: A guide for poverty reduction policy. *Journal of Economics Theory*, 4: 6–10.
- Awang, N. A., Ali, A. M. and Abdulrahman, M. D. (2018). Edible bitter mushroom from Besut, Malaysia. *Journal of Agriculture and Biotechnology*, 9(2): 70–79. Journal of Agriculture and Biotechnology article
- Bahmanpour, S., Talaei, T., Vojdani, Z., Panjehshahin, M. R. and Poostpasand, A. (2006). Effect of *Phoenix dactylifera* pollen on sperm parameters and reproductive system of adult male rats. *Iranian Journal of Medical Sciences*, 31(4): 208–212. Iranian Journal of Medical Sciences article
- Basch, E., Gabardi, S. and Ulbricht, C. (2003). Bitter melon (*Momordica charantia*): A review of efficacy and safety. *American Journal of Health-System Pharmacy*, 60: 356–359. doi.org/10.1093/ajhp/60.4.356
- Basnett, D., Banerjee, M. and Chowdhury, S. K. (2023). A review on medicinal values and pharmacological importance of Moraceae. *Plant Science Today*, 10(2): 226–234. doi.org/10.14719/pst.2385.
- Batcho, I. A., Ewédjè, E. E. B. K., Yédomonhan, H. and Adomou, A. C. (2020). Diversity and endogenous knowledge of aphrodisiac plants in South and Central Benin. *Research Square* (preprint), 1–29. doi.org/10.21203/rs.3.rs-46838/v1
- Brahimi, R. E., Barnossi, A. E., Amrani, M. and Bari, A. (2022). Ethnobotanical study and biodiversity of medicinal plants used in the Province of Taza, North-Eastern Morocco. *Tropical Journal of Natural Product Research*, 6(11): 1814–1831. doi.org/10.26538/tjnpr/v6i11.12
- Brunetti, P., Lo Faro, A. F., Tini, A., Busardò, F. P. and Carlier, J. (2020). Pharmacology of herbal sexual enhancers: A review of psychiatric and neurological adverse effects. *Pharmaceuticals*, 13(10): 1–52. doi.org/10.3390/ph13100309
- Chauhan, N. S., Sharma, V., Dixit, V. K. and Thakur, M. (2014). A review on plants used for improvement of sexual performance and virility. *BioMed Research International*, 2014, 868062. doi.org/10.1155/2014/868062.
- Chen, L., Shi, G. R., Huang, D. D., Li, Y., Ma, C. C., Shi, M., Su, B. X., Zhang, X. and Liu, Y. (2019). Male sexual dysfunction: A review of literature on its pathological mechanisms, potential risk factors, and herbal drug intervention. *Biomedicine & Pharmacotherapy*, 112, 108585. doi.org/10.1016/j.biopha.2019.01.046
- Cramer, H. (2023). The World Health Organization traditional medicine strategy: Enhancing healthcare access, health equity, and health choices worldwide. *Journal of Integrative and Complementary Medicine*, 29: 689–690. doi.org/10.1089/jicm.2023.29124
- Darmani, H., Al-Hiyasat, A. S., Elbetieha, A. M. and Alkofahi, A. (2003). The effect of an extract of *Salvadora persica* (Meswak, chewing stick) on fertility of male and female mice. *Phytomedicine*, 10(1): 62–65. doi.org/10.1078/094471103321648683.
- Dhar, S., Datta, S. and Yadav, A. (2024). *Cyperus articulatus* L.: A review on phytochemical and pharmacological exploration, and effects on human health. *International Journal of Pharmaceutical Quality Assurance*, 15(01): 466–474. doi.org/10.25258/ijpqa.15.1.72.
- Dharani, N. (2016). A review of traditional uses and phytochemical constituents of indigenous *Syzygium* species in East Africa. *Pharmacy Journal of Kenya*, 22(4): 123–127. ResearchGate article
- Di Napoli, A. and Zucchetti, P. A. (2021). Comprehensive review of the benefits of *Taraxacum officinale* on human health. *Bulletin of the National Research Centre*, 45: 110. doi.org/10.1186/s42269-021-00567-1
- Dikala O. F., Ngoy K. E., Maloba M. J., Mbayo K. M., Kanda K. J., Munakongo E. D., Tshibangu K. J. and Mpiana, P. T. (2024). Ethnobotanical studies of reputed aphrodisiac plants used in traditional medicine in Haut-Katanga in DR of Congo. *International Journal of Innovative Science and Research Technology*, 9(5). doi.org/10.38124/ijisrt/IJISRT24MAY2042
- Dirar, A. I. and Devkota, H. P. (2020). Ethnopharmacological uses, phytochemistry and pharmacological activities of *Guiera senegalensis* J.F. Gmel. (Combretaceae). *Journal of Ethnopharmacology*, 267: 113433. doi.org/10.1016/j.jep.2020.113433
- Djenguemtar, J., Yamako Konack, E., Sokoudjou, J. B., Kamsu, G. T., Feudjio, H. B. L., Kodjio, N. and Gatsing, D. (2022). *In vitro* antisalmonella and antioxidant activity of hydroethanolic and aqueous extracts of *Bauhinia rufescens* leaf and stem bark extracts. *Microbiology Research Journal International*, 32(1): 32–46. doi.org/10.9734/mrji/2022/v32i130366.
- Erhenhi, A. H. and Obadoni, B. O. (2015). Known medicinal and aphrodisiac plants of Urhonigbe Forest Reserve, Edo State, Nigeria. *Journal of Medicinal Plants Studies*, 3(4): 101–106. ResearchGate article
- Erhirhie, E. O. and Moke, E. G. (2014). *Xylopia aethiopica*: A review of its ethnomedicinal, chemical and pharmacological properties. *American Journal of PharmTech Research*, 4(6). ResearchGate article
- Farombi, E. O. and Owoeye, O. (2011). Antioxidative and chemopreventive properties of *Vernonia amygdalina* and *Garcinia biflavonoid*. *International Journal of Environmental Research and Public Health*, 8(6): 2533–2555. doi.org/10.3390/ijerph8062533.
- Goyal, M., Nagori, B. P. and Sasmal, D. (2012). Review on ethnomedicinal uses, pharmacological activity and phytochemical constituents of *Ziziphus mauritiana* (Z.

- jujuba* Lam., non-Mill). *Spatula DD*, 2(2): 107–116. doi.org/10.5455/SPATULA.20120422080614.
- Gwimi, P., Faleke, O., Salihu, M., Umar, H., Abubakar, M. and Ibrahim, A. (2015). Prevalence of *Campylobacter* species in fecal samples of pigs and humans from Zuru, Kebbi State, Nigeria. *International Journal of One Health*, 1: 1–5. International Journal of One Health article
- Habeeb, A., Ramesh, S. and Shanmugam, R. (2024). *Calotropis procera* and the pharmacological properties of its aqueous leaf extract: A review. *Cureus*, 16(5): e60354. doi.org/10.7759/cureus.60354
- Handy, A. B. and Meston, C. M. (2020). An objective measure of vaginal lubrication in women with and without sexual arousal concerns. *Journal of Sex & Marital Therapy*, 47, 32–42. doi.org/10.1080/0092623X.2020.1801542.
- Hassan, S. W., Ukwuani-Kwaja, A. N., Nuhu, U. D. and Jabaka, R. D. (2020). Acute and subchronic toxicity studies of *Combretum collinum* methanol root extract in albino rats. *International Journal of Biochemistry Research & Review*, 29(10): 9–28. doi.org/10.9734/ijbcr/2020/v29i1030235
- Hossain, M. M. (2011). Therapeutic orchids: Traditional uses and recent advances: An overview. *Fitoterapia*, 82(2): 102–140. doi.org/10.1016/j.fitote.2010.09.007
- Houdegbe, C. A., Sogbohossou, O. D. and Achigan-Dako, E. G. (2016). Utilization and breeding perspective in the egusi gourd *Melothria sphaerocarpa* (Cogn.) H. Schaef. et S.S. Renner (syn: *Cucumeropsis mannii* Naudin). *Genetic Resources and Crop Evolution*, 63(3). doi.org/10.1007/s10722-015-0361-0.
- Ibrahim, M. A., Doha, E. F., Hiba, E. E., Malak, E. A. and Sahar, B. R. A. (2022). Antioxidant activity of *Croton zambesicus* Muell. Arg seed extract. *Asian Journal of Research in Biochemistry*, 11(3–4): 1–5. doi.org/10.9734/ajrb/2022/v11i3-4216 .
- International Society of Ethnobiology (ISE). (2006). *International Society of Ethnobiology (ISE) code of ethics (with 2008 additions)*. ISE Code of Ethics
- Jeffrey, K. A. (2024). When I use a word.. Aphrodisiacs taxonomy and doctrines. *BMJ*, 386.
- Kankara, S. S., Ibrahim, M. H., Mustafa, M. and Go, R. (2015). Ethnobotanical survey of medicinal plants used for traditional maternal healthcare in Katsina State, Nigeria. *South African Journal of Botany*, 97: 165–175. doi.org/10.1016/j.sajb.2015.01.007.
- Khalid, I., Diarra, B. and Dan Dicko, D. K. (1992). Chemical screening of medicinal plants used in the traditional pharmacopoeia of Niger. *International Journal of Pharmacognosy*, 30(4): 251–262. doi.org/10.3109/13880209209054009
- Kotta, S., Ansari, S.H. and Ali, J. (2013). Exploring scientifically proven herbal aphrodisiacs. *Pharmacognosy Reviews*; 7(13):1–10. doi: 10.4103/0973-7847.112832.
- Kushalan, S., Khyahrii, A. S., Kini, S. and Hegde, S. (2023). *Curculigo orchoides* Gaertn.: An overview of its effects on human health. *Journal of Health and Allied Sciences NU*, 13: 153–160. doi.org/10.1055/s-0042-1750319.
- Lalrosangpuui and Lalrokimi. (2021). A review on the phytochemical properties of five selected genera of orchids. *Science Vision*, 21(2): 50–58. doi.org/10.33493/scivis.21.02.04
- Lifongo, L. L., Simoben, C. V., Ntie-Kang, F., Babiaka, S. B. and Judson, P. N. (2014). A bioactivity versus ethnobotanical survey of medicinal plants from Nigeria, West Africa. *Natural Products and Bioprospecting*, 4: 1–19. doi.org/10.1007/s13659-014-0005-7.
- Lin, H.-D., Lee, Y.-C., Chiang, C.-Y., Lin, Y.-J., and Shih, C. Y. (2023). Protective effects of *Scoparia dulcis* L. extract on high glucose-induced injury in human retinal pigment epithelial cells. *Frontiers in Nutrition*, 10: 1085248. doi.org/10.3389/fnut.2023.1085248.
- Lobo, A. R., Satish, S. and Shabaraya, A. R. (2018). Review on pharmacological activities of *Malus domestica*. *International Journal of Pharma and Chemical Research*, 4(4): 243–247. ResearchGate article
- Lodha, D. and Singh, N. (2025). Ethnobotanical perspectives: Sustainable use and management of desert plant resources for future generations. *Journal of Gujarat University*, 4(2). doi.org/10.47413/mrat6s22
- Losoya-Sifuentes, C., Pinto-Jimenez, K., Cruz, M., Rodriguez-Jasso, R. M., Ruiz, H. A., Loredó-Treviño, A., López-Badillo, C. M. and Belmares, R. (2023). Determination of nutritional and antioxidant properties of Maya nut flour (*Brosimum alicastrum*) for development of functional foods. *Foods*, 12: 1398. doi.org/10.3390/foods12071398
- Mariod, A. A., Mirghani, M. E. S. and Hussein, I. H. (2017). *Unconventional oilseeds and oil sources*. London: Academic Press.
- Maroyi, A. (2019). Review of medicinal uses, phytochemistry and pharmacological properties of *Boscia senegalensis*. *Journal of Pharmaceutical Sciences and Research*, 11(9): 3355–3361. Semantic Scholar entry
- Masud Parvez, G. M. (2016). Pharmacological activities of mango (*Mangifera indica*): A review. *Journal of Pharmacognosy and Phytochemistry*, 5(3): 1–7.
- Miraj, S. (2016). Pharmacological effects of *Saccharum officinarum* L. *Der Pharmacia Lettre*, 8(13): 223–225. Der Pharmacia Lettre archive
- Moore, A. M. D. and Pithavadian, R. (2021). Aphrodisiacs in the global history of medical thought. *Journal of Global History*, 16(1): 24–43. doi.org/10.1017/S1740022820000108
- Mugale, M. N., Dev, K., More, B. S., Mishra, V. S., Washimkar, K. R., Singh, K., Maurya, R., Rath, S. K., Chattopadhyay, D. and Chattopadhyay, N. (2024). A comprehensive review on preclinical safety and toxicity of medicinal plants. *Clinical Complementary Medicine and Pharmacology*, 4(1). doi.org/10.1016/j.ccmp.2024.100129.
- Mukti, B. H. (2024). Ethnobotanical studies of medicinal plants in Borneo. *Health Science International Journal*, 2(2). doi.org/10.71357/hsij.v2i2.41
- Munarriz, R., Kim, N. N., Goldstein, I. and Traish, A. M. (2002). Biology of female sexual function. *Urologic Clinics of North America*, 29(3): 685–693. doi.org/10.1016/S0094-0143(02)00069-1
- Murti, Y., Yogi, B. and Pathak, D. (2010). Pharmacognostic standardization of leaves of *Calotropis procera* (Ait.) R. Br. (Asclepiadaceae). *Pharmacognosy Journal*, 1(1): 14–17. doi.org/10.4103/0974-7788.59938
- Nahid Lorzadeh, F., Sepavand, M. and Soleimaninezhad, N. K. (2016). The effect of extract of oak gall for vaginal

- tightening and rejuvenation in women with vaginal relaxation. *Open Journal of Obstetrics and Gynecology*, 6(13). doi.org/10.4236/ojog.2016.613106.
- Netshiluvhi, T. R. (2025). Scientific validation of South African aphrodisiac plants for erectile dysfunction: An exploratory review. *Natural Product Communications*, 20. doi.org/10.1177/1934578X251321725
- Ntakirutimana, G. K. (2025). The impact of urbanization on traditional medicinal plant use in disease management. *Research Inventory Journal of Biology and Applied Sciences*, 5(1): 47–50. doi.org/10.59298/RIJBAS/2025/514750
- Nurudeen, Q. O., Asinmi, M. R., Falana, M. B. and Dikwa, M. A. (2023). Aphrodisiac potentials of aqueous extract of *Azanza garckeana* fruit pulp in fluoxetine-induced sexually-impaired female rats. *Journal of Science and Technology*, 15(2): 11–22. Journal of Science and Technology article
- O'Dwyer, C., Kumar, S., Wassersug, R., Khorrami, A., Mukherjee, S., Mankowski, P., Genoway, K. and Kavanagh, A. G. (2023). Vaginal self-lubrication following peritoneal, penile inversion, and colonic gender-affirming vaginoplasty: A physiologic, anatomic, and histologic review. *Sexual Medicine Reviews*. doi.org/10.1093/sxmrev/qead015
- Ogbuehi, I. H., Ebong, O. O. and Obianime, A. W. (2015). A preliminary study on the effect of *Abrus precatorius* Linn on reproductive parameters in female *Rattus norvegicus*, Wistar strain. *European Journal of Medicinal Plants*, 7(3): 156–166. doi.org/10.9734/EJMP/2015/15271.
- Okagu, I. U., Ndefo, J. C., Aham, E. C. and Udenigwe, C. C. (2021). *Zanthoxylum* species: A comprehensive review of traditional uses, phytochemistry, pharmacological and nutraceutical applications. *Molecules*, 26: 4023. doi.org/10.3390/molecules26134023.
- Okaiyeto, K. and Oguntibeju, O. O. (2021). African herbal medicines: Adverse effects and cytotoxic potentials with different therapeutic applications. *International Journal of Environmental Research and Public Health*, 18, 5988. doi.org/10.3390/ijerph18115988
- Osunga, S., Amuka, O., Machoch, A. K., Getabu, A. and Onani, M. O. (2023). Some members of genus *Cassia* (*Senna*): Their ethnobotany, potency and prospects of drug discovery. *Indian Journal of Pharmacy and Drug Studies*, 2(2): 41–62. Indian Journal of Pharmacy and Drug Studies article
- Pareek, A., Pant, M., Gupta, M. M., Kashania, P., Ratan, Y., Jain, V., Pareek, A. and Chuturgoon, A. A. (2023). *Moringa oleifera*: An updated comprehensive review of its pharmacological activities, ethnomedicinal, phytopharmaceutical formulation, clinical, phytochemical, and toxicological aspects. *International Journal of Molecular Sciences*, 24(3): 2098. doi.org/10.3390/ijms24032098
- Rai, A., Das, S., Chamallamudi, M. R., Nandakumar, K. and Shetty, R. (2018). Evaluation of the aphrodisiac potential of a chemically characterized aqueous extract of *Tamarindus indica* pulp. *Journal of Ethnopharmacology*, 210: 118–124. doi.org/10.1016/j.jep.2017.08.016.
- Ray, A., Malik, J. K., Singh, S. P., Singh, G. and Siroliya, V. (2024). Aphrodisiac performance of bioactive compounds from *Trigonella foenum-graecum* seed: In-silico molecular docking and dynamics simulation approach. *Saudi Journal of Medical and Pharmaceutical Sciences*, 10(5): 310–323. doi.org/10.36348/sjmps.2024.v10i05.007
- Regolo, L., Giampieri, F., Battino, M., Armas Diaz, Y., Mezzetti, B., Elempuru-Zabaleta, M., Mazas, C., Tutusaus, K. and Mazzoni, L. (2024). From by-products to new application opportunities: The enhancement of the leaves deriving from the fruit plants for new potential healthy products. *Frontiers in Nutrition*, 11: 1083759. doi.org/10.3389/fnut.2024.1083759.
- Roozbeh, N. and Darvish, L. (2016). *Acacia nilotica*: New plant for help in pelvic organ prolapse. *Journal of Menopausal Medicine*, 22(3): 129–130. doi.org/10.6118/jmm.2016.22.3.129.
- Sabo, S. Y., Otimenyin, S. O., Uguru, M. O. and Bukar, B. B. (2018). Ethnobotanical survey of medicinal plants used as aphrodisiacs in Bauchi Local Government Area. *Journal of Complementary and Alternative Medical Research*, 4(4), 1–13. doi.org/10.9734/JOCAMR/2017/39229
- Sha'ari, N., Woon, L. S.-C., Sidi, H., Das, S., Bousman, C. A. and Mohamed Saini, S. (2021). *Beneficial effect of natural products on female sexual dysfunction: A systematic review and meta-analysis*. *Phytomedicine*, 93: 153760. doi.org/10.1016/j.phymed.2021.153760
- Shah, K. A., Patel, M. B., Patel, R. J. and Parmar, P. K. (2010). *Mangifera indica* (mango). *Pharmacognosy Reviews*, 4(7): 42–48. doi.org/10.4103/0973-7847.65325
- Singh, R., Singh, S., Jeyabalan, G. and Ali, A. (2012). An overview on traditional medicinal plants as aphrodisiac agent. *Journal of Pharmacognosy and Phytochemistry*, 1(4). ResearchGate article
- Srivastava, A. K. and Singh, V. K. (2016). *Carica papaya*—A herbal medicine. *International Journal of Research Studies in Biosciences*, 4(11): 19–25. doi.org/10.20431/2349-0365.0411004
- Sundaram, V., Mohammed, S., Srinivasan, M. R., Johnson, J., Suepaul, R., Pargass, I., John, C., Ramdhanie, D., Lallack, S., Daniel, E. and Gilkes, L. (2021). *Acute and subacute toxicity evaluation of hydroalcoholic extract from the stem bark of Bois Bande (Parinari campestris Aubl. 1772) in rats*. *BMC Pharmacology and Toxicology*, 22(1): 51. doi.org/10.1186/s40360-021-00522-w
- Tariq, H. N. A. and Taj, A. M. (2010). *Idarae Kitabus Shifa* (pp. 595–596). New Delhi: Idarae Kitabus Shifa.
- Tijjani, U., Mabrouk, M. I., Yarube, I. U. and Muhammad, M. (2018). Aphrodisiac effect of aqueous stem bark extract of *Ficus sycomorus* on female Wistar rats. *Nigerian Journal of Basic and Applied Sciences*, 26(1): 70–79. doi.org/10.4314/njbbs.v26i1.8.
- Tukur, K., Musawa, B. B., Abubakar, M. L., Muhammad, M. and Abba, H. S. (2024). Ethnobotanical survey of medicinal plants used traditionally for the management of various ailments in Kaura Namoda, Zamfara State, Nigeria. *FUDMA Journal of Sciences*, 8(2): 188–195. doi.org/10.33003/fjs-2024-0802-2277
- Ugwah-Oguejiofor, C. J., Bello, S. O., Okolo, R. U., Abonyi, L. E. and Ibeh, C. C. (2011). *Ficus platyphylla* promotes fertility in female *Rattus norvegicus* Wistar strain: A preliminary study. *Reproductive Biology and Endocrinology*, 9: 145–146. doi.org/10.1186/1477-7827-9-145
- Ukwuani-Kwaja, A. N., Sani, I. and Nuhu, U. D. (2024). Ethnobotanical survey of some medicinal plants used

- against trypanosomiasis in Zuru Local Government Area, Kebbi State, Nigeria. *Tropical Journal of Natural Product Research*, 8(7): 7828–7839. doi.org/10.26538/tjnpr/v8i7.29
- Utomo, I. (2013). Assessment of grain loss due to insect pest during storage for small scale farmers of Kebbi. *IOSR Journal of Agriculture and Veterinary Science*, 3: 38–50. doi.org/10.9790/2380-0353850
- Vasconcelos, P. A., Carrito, M., Quinta-Gomes, A. L., Patrão, A. L., Nóbrega, C. A., Costa, P. A., Rodrigues, D. L. and Pereira, H. (2024). Associations between sexual health and well-being: A systematic review. *Bulletin of the World Health Organization*, 102: 873–887D. doi.org/10.2471/BLT.24.291565
- Yakubu, M. T., Akanji, M. A. and Oladiji, A. T. (2005). Aphrodisiac potentials of the aqueous extract of *Fadogia agrestis* (Schweinf. Ex Hiern) stem in male albino rats. *Asian Journal of Andrology*, 7(4): 399–404. doi.org/10.1111/j.1745-7262.2005.00052.x
- Yilmaz-Oral, D., Onder, A., Gur, S., Carbonell-Barrachina, Á. A., Kaya-Sezginer, E., Oztekin, C. V. and Zor, M. (2020). The beneficial effect of clove essential oil and its major component, eugenol, on erectile function in diabetic rats. *Andrologia*, 52(6): e13606. doi.org/10.1111/and.13606.
- Yusuf, A. A., Lawal, B. and Sani, S. (2020). Pharmacological activities of *Azanza garckeana* (Goron Tula) grown in Nigeria. *Clinical Phytoscience*, 6: 27. doi.org/10.1186/s40816-020-00173-0.



PUBLISH WITH US FOR WORLDWIDE VISIBILITY

HOME ABOUT JOURNALS IPS BOOKS ARCHIVES SUBMISSION SERVICES CAREER CONTACT US

Enter Search...

Call for Papers

Open Access

FEATURED PUBLICATIONS

Antioxidant and Dietary Fibre Content of Noodles Produced From Wheat and Banana Peel Flour
This study found that adding banana peel flour to wheat flour can improve the nutritional value of noodles, such as increasing dietary fibre and antioxidant content, while reducing glycemic index.
DOI: <https://doi.org/10.54117/jpetms.v2i1.74>

Antioxidant and Dietary Fibre Content of Noodles Produced From Wheat and Banana Peel Flour (IPS Journal of Nutrition and Food Science, 2(2), 46–51)
DOI: <https://doi.org/10.54117/jpetms.v2i1.74>

Impact of Pre-Seeding Physical Treatments on The Seed Germination Behaviour of Sorghum (*Sorghum bicolor*)
This study found that ultrasound and microwave treatments can improve the germination of sorghum grains by breaking down the seed coat and increasing water diffusion, leading to faster and more effective germination.

Submit your manuscript for publication: [Home - IPS Intelligentsia Publishing Services](https://doi.org/10.54117/jpetms.v2i1.74)