

## LIST OF FIGURES

<b>FIGURE</b>	<b>PAGE NO</b>
Fig 1: Plants being used by various system of medicines	12
Fig 2: Break up of medicinal plant by their parts utilized	13
Fig 3: Methodology	32
Fig 4: PubMed homepage	33
Fig 5: Homepage of database	38
Fig 6: Query system for the database	39
Fig 7: Data entry for Amenorrhoea	40
Fig 8: Data entry for Dysmenorrhoea	41
Fig 9: Data entry for Infertility	42
Fig 10: Data entry for Irregular menstruation	43
Fig 11: Data entry for Lack of sexual desire	44
Fig 12: Data entry for Leucorrhoea	45
Fig 13: Data entry for Menorrhagia	46
Fig 14: Data entry for Ovarian cysts	47
Fig 15: Data entry for Reduced lactation	48

## LIST OF TABLES

<b>TABLE</b>	<b>PAGE NO</b>
Table 1: Genes wherein mutation causes female infertility	4
Table 2: List of medicinal plants (scientific name, family, common name) disease treated, parts used and route of administration used in the database.	13
Table 2: Disease table	34
Table 3: Table used for entering the data of different diseases	36

# **Database of medicinal plants used in treatment of Gynaecological diseases**

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## **ABSTRACT**

Gynaecological problems are common in the females. The knowledge of most plants used in the treatment of gynaecological diseases and the plant part which is effective in treatment is confined to very few persons. However, this form of medicine is not very popular. Therefore, it is of considerable interest to understand the plants and the parts used for treatment. A number of scientific investigations have highlighted the importance of several medicinal plants in treatment of various gynaecological diseases. However this information is scattered throughout the extensive literature. Sensing the importance of documenting such medicinal plants, here in this study, we created a database of medicinal plants associated with gynaecological diseases treatment, a comprehensive resource of information providing detailed information of the plant used to cure gynaecological diseases, family of the plant, plant part used, dosage, route of administration, and method of preparation. Currently the database houses 121 medicinal plants associated with treatment of 9 gynaecological diseases. Such specific database is the current need for clinicians and researchers working in this field and this data can be used for the betterment of human society.

# 1.INTRODUCTION

## 1.1 Gynaecological diseases

**Gynaecology** or **gynecology** is "the study of women" or it is the medical practice dealing with the health of the female reproductive system (uterus, vagina, and ovaries). Gynaecological problems are common diseases in females. Infections of the reproductive tract, complications after childbirth, and reproductive problems continue to be a major health challenge worldwide. An impressive number of plant species is traditionally used to remedy such afflictions, and some have been investigated for their efficacy with positive results.

Some of the common gynaecological problems are:

- Amenorrhoea (absence or stoppage of menstrual periods)
- Cancer of the reproductive organs including ovaries, uterus and cervix
- Dysmenorrhoea (painful menstrual periods)
- Infertility
- Leucorrhoea
- Menorrhagia (excessive menstrual flow)
- Oligomenorrhoea
- Post delivery pains

### 1.1.1 Causes

Menstrual disorders are the first cause of gynaecological disease and affect millions of women yearly. Many factors are known to increase the risk of gynaecological diseases, including age, tobacco smoking, sexually transmitted disease, body weight and eating disorders. Besides these acquired factors, some genetic factors are also responsible for these diseases. For example, there are many genes wherein mutation causes female infertility, as given in Table 1.

**Table 1:** Genes wherein mutation causes female infertility (adapted by: google)

Gene	Encoded protein	Effect
BMP 15	Bone morphogenetic protein 15	Hypergonadotrophic ovarian failure (POF4)
BMPR1B	Bone morphogenetic protein	Ovarian dysfunction,

	<a href="#">receptor 1B</a>	hypergonadotrophic hypogonadism and acromesomelic chondrodysplasia
CBX2; M33	Chromobox protein homolog 2 ; Drosophila polycomb class	Autosomal 46,XY, male-to-female sex reversal (phenotypically perfect females)
CHD7	Chromodomain-helicase-DNA-binding protein 7	CHARGE syndrome and Kallmann syndrome (KAL5)
DIAPH2	Diaphanous homolog 2	Hypergonadotrophic, premature ovarian failure (POF2A)
FGF8	<a href="#">Fibroblast growth factor 8</a>	Normosmic hypogonadotrophic hypogonadism and Kallmann syndrome (KAL6)
<a href="#">FGFR1</a>	Fibroblast growth factor receptor 1	Kallmann syndrome (KAL2)
<a href="#">FSHR</a>	<a href="#">FSH receptor</a>	Hypergonadotrophic hypogonadism and ovarian hyperstimulation syndrome
FSHB	<a href="#">Follitropin subunit beta</a>	Deficiency of follicle-stimulating hormone, primary amenorrhoea and infertility
<a href="#">FOXL2</a>	Forkhead box L2	Isolated premature ovarian failure (POF3) associated with BPES type I; FOXL2  402C --> G mutations associated with human granulosa cell tumours
FMR1	<a href="#">Fragile X mental retardation</a>	Premature ovarian failure (POF1) associated with premutations
<a href="#">GNRH1</a>	<a href="#">Gonadotropin releasing hormone</a>	Normosmic hypogonadotrophic hypogonadism
<a href="#">GNRHR</a>	<a href="#">GnRH receptor</a>	Hypogonadotrophic hypogonadism
<a href="#">KAL1</a>	Kallmann syndrome	Hypogonadotrophic hypogonadism and insomnia, X-linked Kallmann syndrome (KAL1)
<a href="#">KISS1R ; GPR54</a>	KISS1 receptor	Hypogonadotrophic hypogonadism
LHB	Luteinizing hormone beta polypeptide	
<a href="#">LHCGR</a>	<a href="#">LH/choriogonadotrophin receptor</a>	Hypergonadotrophic hypogonadism (luteinizing hormone resistance)

DAX1	Dosage-sensitive sex reversal, adrenal hypoplasia critical region, on chromosome X, gene 1	X-linked congenital adrenal hypoplasia with hypogonadotropic hypogonadism; dosage-sensitive male-to-female sex reversal
NR5A1; SF1	Steroidogenic factor 1	46,XY male-to-female sex reversal and streak gonads and congenital lipoid adrenal hyperplasia; 46,XX gonadal dysgenesis and 46,XX primary ovarian insufficiency
POF1B	Premature ovarian failure 1B	Hypergonadotrophic, primary amenorrhea (POF2B)
PROK2	Prokineticin	Normosmic hypogonadotropic hypogonadism and Kallmann syndrome (KAL4)
PROKR2	Prokineticin receptor 2	Kallmann syndrome (KAL3)
RSPO1	R-spondin family, member 1	46,XX, female-to-male sex reversal (individuals contain testes)
SRY	Sex-determining region Y	Mutations lead to 46,XY females; translocations lead to 46,XX males
SOX9	SRY-related HMB-box gene 9	Autosomal 46,XY male-to-female sex reversal (campomelic dysplasia)
TAC3	Tachykinin 3	Normosmic hypogonadotropic hypogonadism

### 1.1.2 Prevention

Measures to prevent the gynaecological problems:

- ✓ **Maintaining a healthy lifestyle.** Excessive exercise, consumption of caffeine and alcohol, and smoking are all associated with increased risk of gynaecological problems. Eating a well-balanced, nutritious diet, with plenty of fresh fruits and vegetables and maintaining a normal weight is very necessary for avoiding the risk of gynaecological diseases. When it comes to diet it is very important to avoid eating toxins.
- ✓ **Treating or preventing existing diseases.** Identifying and controlling chronic diseases such as diabetes. Regular physical examinations (including pap smear) help detect early signs of infections or abnormalities.
- ✓ **Not delaying parenthood.** Fertility does not ultimately cease before menopause, but it starts declining after age 27 and drops at a somewhat greater rate after age 35. Women

whose biological mothers had unusual or abnormal issues related to conceiving may be at particular risk for some conditions, such as premature menopause, that can be mitigated by not delaying parenthood.

## **1.2 Medicinal plants – Importance & Scope**

India is a varietal emporium of medicinal plants and is one of the richest countries in the world as regards genetic resources of medicinal plants. The use of plant species as remedies is probably as ancient as man himself. According to estimates, large population of the world about 70 and 80% depends on traditional medicines to meet their demands and for primary health care, most of which involve the use of plant extracts. They rely on medicinal plants because of their effectiveness, lack of modern healthcare alternatives and cultural preferences. In India, almost 95% of the prescriptions are plant based, the traditional system of Unani, Ayurveda, Homeopathy and Siddha. The relationship between plants and human cultures is not limited to the use of plants for food, clothing, religious ceremonies, ornamentation and shelter but also includes their use for health care. It was officially recognized that 2500 plant species have medicinal value while over 6000 plants are estimated to be explored in traditional, folk and herbal medicine. It is necessary that we should have full knowledge regarding the occurrence, frequency, distribution and phenology of various plants for their proper utilization. Traditionally, the rural women prefer plant medicines rather than modern medicines for abortion, menstrual trouble, conception disorders, sterility, delivery problems, etc. The popularity of traditional medicines has grown enormously during the recent years. The domestic demand for traditional medicines in India has increased. The market of traditional systems of medicine in India is estimated to be about Indian rupees 4000 crores per year. For centuries, medicinal plants have been used all over the world for the treatment and prevention of various ailments, particularly in developing countries where infectious diseases are endemic and modern health facilities and services are inadequate. Elsewhere, many potent drugs have been purified from medicinal plants including anti-malarial, anti-cancer, anti-diabetic and antibacterial compounds. In Africa, traditional medicine is of great value and more than 70% of the population refers to traditional healers concerning health issues. In South Africa, traditional medicine is well recognized and different communities use a wide variety of plants to treat gastrointestinal disorders such as diarrhea and infection by intestinal parasites, which are particularly prevalent in rural areas.

Traditional remedies are part of the cultural and religious life of the tribal. The tribals depend on the herbal medicines for curing various gynecological disorders. Tribal do not approach doctors (physicians) due to lack of awareness and shyness or hesitation. Patients who receive the treatment for any gynecological complication enquired the local names, parts used and method of administration. A wide range of herbal traditional medicines are used to regulate the menstrual cycle and to enhance fertility. Traditionally, the rural women prefer plant medicines rather than modern medicines for abortion, menstrual trouble, conception disorders, sterility, delivery

problems, etc. Medicinal plant resources of forest origin are extensively used in India for various systems of medicine like Ayurveda, Unani, Homoeopathy, Allopathy, Siddha and Ethnic etc. Such traditional used of plants as medicine has not been documented properly, rather remain secret and passed from one generation to another through word mouth. Naturally, due to non-recording properly, this traditional knowledge is gradually vanishing as a result of modernization. India is one of the world's 12 mega diversity, centres having rich vegetation with 47,000 plant species and a wide variety of medicinal plants along with tradition of plant based knowledge distributed among the vast numbers of ethnic groups. There are many medicinally important species which are used to produce various types of drug and medicines to treat many ailments in India since the time of the *Rig veda*. An appropriate dosage to prepare drug from different parts of plant body like root, stem, leaves, flowers, fruits, barks, seed, rhizomes, bulbs, tubers are prescribed as a remedy to treat different kinds of diseases and disorders. With loss of biodiversity and negative effects of mainstream culture, the traditional/folk medicinal knowledge of many ethnic groups in Africa and elsewhere is facing critical depletion. Loss of traditional knowledge of plants and culture which is the same as the disappearance of biodiversity is not a reversible process. Deforestation process is a serious threat to biodiversity conservation in the tropics. If no action is taken to remedy the trend, a considerable number of plant and animal species are likely to become extinct even before they are known to science.

Traditional Medicine (TM) is used globally and is rapidly growing in economic importance. In developing countries, TM is often the only accessible and affordable treatment available. The WHO reports that TM is the primary health care system for 80% of the population in developing countries. Plants have been used in traditional medicine for several thousand years. The knowledge of medicinal plants has been accumulated in the course of many centuries based on different medicinal systems such as Ayurveda, Unani and Siddha. In India, it is reported that traditional healers use 2500 plant species and 100 species of plants serve as regular sources of medicine. During the last few decades there has been an increasing interest in the study of medicinal plants and their traditional use in different parts of the world. Documenting the indigenous knowledge through ethnobotanical studies is important for the conservation and utilization of biological resources. In the developed countries, 25 per cent of the medical drugs are based on plants and their derivatives. Traditional medical knowledge of medicinal plants and their use by indigenous cultures are not only useful for conservation of cultural traditions and biodiversity but also for community healthcare and drug development in the present and future. Plants are the basis of life on earth and are central to people's livelihoods. Tribal people are the ecosystem people who live in harmony with the nature and maintain a close link between man and environment. Indian subcontinent is being inhabited by over 53.8 million tribal people in 5000 forest dominated villages of tribal community and comprising 15% of the total geographical area of Indian landmasses, representing one of the greatest emporia of ethnobotanical wealth. The history reveals that most of the tribal economies have been engaged in subsistence agriculture or hunting and gathering. With the passage of time, they have developed



a great deal of knowledge on the use of plants and plant products in curing various ailments. They have a deep belief in their native folklore medicine for remedies and they rely exclusively on their own herbal cure.

Medicinal plants are one of the most sensitive commodity areas of research in the world today. The herbal products today symbolize safety in contrast to the synthetics that are regarded as unsafe to human and environment. Although herbs had been prized for their medicinal, flavouring and aromatic qualities for centuries, the synthetic products of the modern age surpassed their importance, for a while. However, the blind dependence on synthetics is over and people are returning to the naturals with hope of safety and security. Over three-quarters of the world population relies mainly on plants and plant extracts for care. More than 30% of the entire plant species, at one time or other are used for medicinal purposes. The use of medicinal plants has been a central component of health care in many cultures for centuries. The World Health Organization estimates that up to 80 percent of the world now relies on medicinal plants as their main source of health care. In developed countries such as United States, plant drugs constitute as much as 25% of the total drugs, while in fast developing countries such as China and India, the contribution is as much as 80%. Thus, the economic importance of medicinal plants is much more to countries such as India than to rest of the world. These countries provide two third of the plants used in modern system of medicine and the health care system of rural population depend on indigenous systems of medicine. Of the 2,50,000 higher plant species on earth, more than 80,000 are medicinal. India is one of the world's 12 biodiversity centres with the presence of over 45000 different plant species. Plants contain useful constituents, including vitamins, minerals, proteins, carbohydrates, essential oils, tannins, alkaloids, bitters and flavonoids. Each part of the plant contains distinct properties and is used for different purposes. The seeds of the *Jatropha* plant treat parasitic worms, while the leaves of the same plant are used for wound healing. The root of the papaya tree treats bronchial asthma, and the leaves, bloody diarrhea. Leaves of the pigeon pea plant soothe toothaches, and the seeds are pounded with water as a remedy for stomach aches. Plants are used for specific problems of both genders. For example, *Mimosa pudica*, *Ruta graveolens*, *Abelmoschus moschatus*, *Chamaesyce hirta*, *Cola nitida*, *Ambrosia cumanensis*, *Pilea microphylla*, *Eryngium foetidum*, *Aristolochia trilobata*, *Coleus aromaticus*, *Laportea aestuans* and *Vetiveria zizanioides* are used for childbirth and infertility.

### **1.3 Efficacy of traditionally used plants**

In India, the use of plants is a widespread practice and the persistence in the use of medicinal plants among people of urban and rural communities in Indian could be considered as evidence of their efficacy and there are very few experimental studies, which validate the therapeutic properties of these plants. Traditional medical treatment, supported mainly by the use of medicinal plants, represents the main alternative methods which has its mainly undocumented scientifically and is still communicated verbally from one generation to the next. Many leads for further

investigation could be discovered. In developing countries and particularly in Colombia, low income people such as farmers, people of small isolate villages and native

communities use folk medicine for the treatment of common infections. These plants are ingested as decoctions, teas and juice preparations to treat respiratory infections. When people from these remote communities get an infectious disease, they are usually treated by traditional healers because of their expertise in such procedures as making diagnoses, treating wounds, setting bones and making herbal medicines. Traditional healers claim that their medicine is cheaper and more effective than modern medicine. Patients of these communities have a reduced risk to get infectious diseases from resistant pathogens than people from urban areas treated with traditional antibiotics.

#### **1.4 Medicinal plants in curing gynaecological diseases**

Today, Medicinal plants plays a relevant role for curing the various gynaecological diseases. Throughout history women have tried to control or enhance their fertility with various levels of societal support. Many herbal remedies are traditionally used as contraceptives (to prevent ovulation or fertilisation), abortifacients (to prevent implantation), emmenagogues (to stimulate uterine flow) or oxytocics (to stimulate uterine contractions, particularly to promote labour). Medicinal plants have a significant role during pregnancy, birth and postpartum care in many rural areas of the world. Plants are used in women's health related conditions such as female fertility, menorrhoea, birth control, pregnancy, birth (parturition) and lactation.

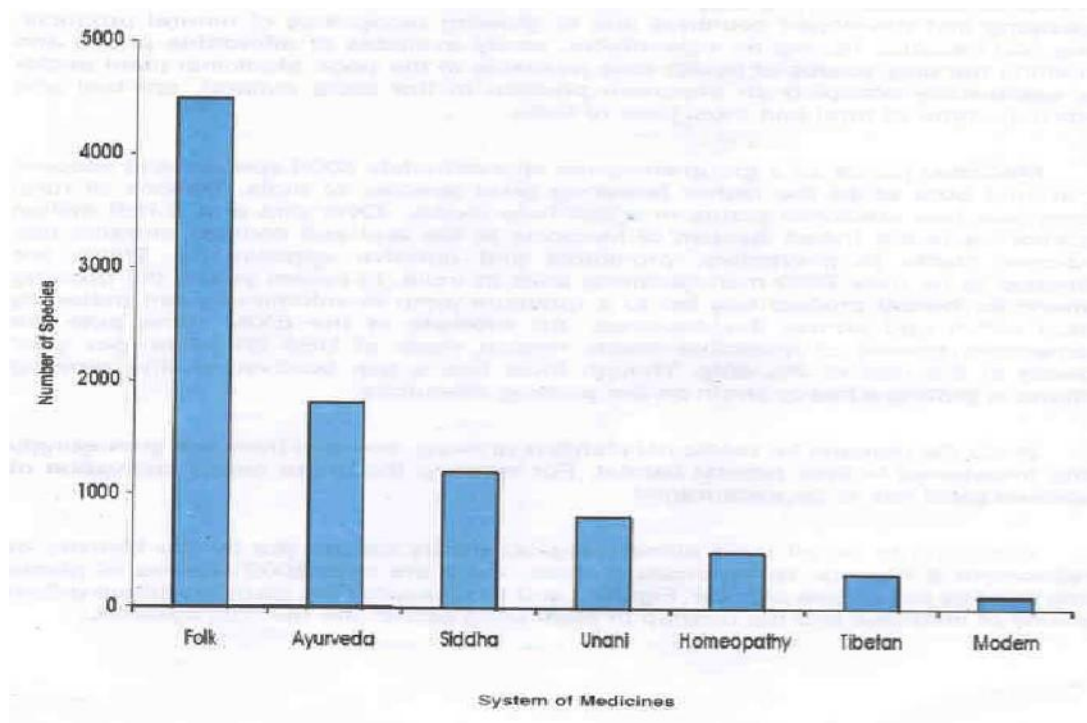
Traditional medical knowledge of medicinal plants and their use by indigenous healers are not only useful for conservation of cultural traditions and biodiversity but also for community healthcare and drug development in the present and future. Since the beginning of this Century, there has been an increasing interest in the study of medicinal plants and their traditional use in different parts of the world. The tribals depend on the herbal medicines for curing various gynecological disorders. Tribals do not approach doctors (physicians) due to lack of awareness and shyness or hesitation. Herbal healers and their patients who receive the treatment for any gynecological complication enquired the local names, parts used and method of administration. Traditional remedies are part of the cultural and religious life of the tribal. A wide range of herbal traditional medicines are used to regulate the menstrual cycle, enhance fertility, to promote sexual desire. The application of medicinal plants for curing the gynaecological diseases, the very common "plague" of our modern times, has resulted in increased therapeutic efficacy. Research results testify to the evolution of knowledge coming from pharmacognosy and its historical roots in ancient herbal medicine. Thus it is of utmost requirement to provide a platform containing all the information related to the medicinal plants used for treatment of gynaecological diseases in females. We thus developed a database to curb this requirement.

## 1.5 Apache Tomcat

**Apache Tomcat** (or simply **Tomcat**) is an open source web server and servlet container developed by the Apache Software Foundation (ASF). Tomcat implements the Java Servlet and the Java Server Pages (JSP) specifications from Sun Microsystems, and provides a "pure Java" HTTP web server environment for Java code to run in. Tomcat runs in a single operating system process. The process runs a Java virtual machine (JVM). Every single HTTP request from a browser to Tomcat is processed in the Tomcat process in a separate thread. Apache Tomcat includes tools for configuration and management, but can also be configured by editing XML configuration files.

## 2. REVIEW OF LITERATURE

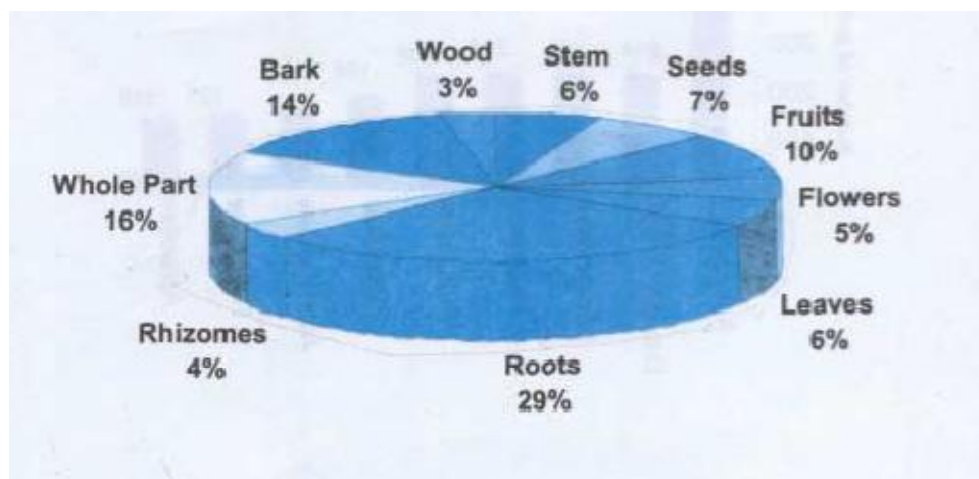
According to the World Health Organization (WHO), as many as 80% of the world's people depend on traditional medicine for their primary healthcare needs (Muthu et al.,2006). According to the report of the task force on conservation and sustainable use of medicinal plants, an all India ethnobiological survey carried out by the Ministry of Environment & Forests, Government of India which states that there are over 8000 species of plants being used by the people of India. Figure 1 represents the plant in various Indian systems of medicine.



**Figure 1:** Plants being used by various system of medicines

Medicinal plants are living resource, exhaustible if overused and sustainable if used with care and wisdom. At present 95% collection of medicinal plant is from wild. The quality of medicinal plants depends on the geographical origin, time and stage of growth when collection has been done and post harvest handling. The collections in most cases are done by villagers tribals residing in the vicinity of forest in their spare time. The plant part is collected without paying attention to the stage of maturity, dried haphazardly and stored for long periods under unsuitable conditions. The quality of collected material, as such is often degraded. Several medicinal plants have been assessed as endangered, vulnerable and threatened due to over harvesting or unskillful harvesting in the wild. Habitat destruction in the form of deforestation is an added danger. The other main source of medicinal plant is from cultivation. Analysis of habits of medicinal plants indicate that they are distributed across various habitats. One third are trees and an equal portion shrubs and the remaining one third herbs, grasses and climbers. A very small proportion of the

medicinal plants are lower plants like lichens, fern algae, etc. Majority of the medicinal plants are higher flowering plants. Of the 386 families and 2200 genera in which medicinal plants are recorded, the families Asteraceae, Euphorbiaceae, Laminaceae, Fabaceae, Rubiaceae, Poaceae, Acanthaceae, Rosaceae and Apiaceae shore the larger proportion of medicinal plant species with the highest number of species (419) falling under Asteraceae. About 90% of medicinal plant used by the industries are collected from the wild. While over 800 species are used in production by industry, less than 20 species of plants are under commercial cultivation. Over 70% of the plant collections involve destructive harvesting because of the use of parts like roots, bark, wood, stem and the whole plant in case of herbs (figure 2). This poses a definite threat to the genetic stocks and to the diversity of medicinal plants if biodiversity is not sustainably used.



**Figure 2:** Break up of medicinal plant by their parts utilized.

**Table2:** List of medicinal plants (scientific name, family, common name) disease treated, parts used and route of administration used in the database.

SCIENTIFIC NAME OF THE PLANT	FAMILY	COMMON NAME	DISEASE ID	DISEASE	PLANT PART USED	METHOD OF PREPARATION/ROUTE OF ADMINISTRATION	LITERATURE
Abrus precatorius	Fabeceae	Rosary pea	D3	INFERTILITY	root	Decoction is taken	Amri et al.,2012

						orally.	
Acacia farnesiana	Mimosaceae	Sweet acacia	D7	MENORRHAGIA	bark	Bark soaked in water and applied 7-10 days continuously.	Tripathi et al.,2010
Acanthus montanus	Acanthaceae	Mountain thistle	D2	DYSMENORRHOEA	leaves	Leaves are taken orally.	Focho et al.,2009
Achyranthes aspera	Amaranthaceae	Chaff-flower	D1	AMENORRHOEA	leaf	3ml fresh leaf decoction given orally for 7-15 days once or twice a day.	Tripathi et al.,2010
Adiantum concinnum	Adiantaceae	Polished maidenhair	D4	IRREGULAR MENSTRUATION	Leaves and stems, fresh	Oral	
Albizia lebbek	Mimosaceae	tiamia	D3	INFERTILITY	bark	Decoction with raphia palm wine is taken orally.	Focho et al.,2009
Alchemilla cryptantha	Rosaceae		D2	DYSMENORRHOEA	Whole plant	Decoction is taken orally.	Focho et al.,2009
Allium cepa	Liliaceae	garlic	D2	DYSMENORRHOEA	bulb	Bulbs boiled with mustard oil massaged.	Rawat et al.,2011
Aloe vera	Liliaceae	True aloe	D4	IRREGULAR MENSTRUATION	leaves	Leaf pith vegetable is used	Rawat et al.,2011
Amaranthus spinosus	Amaranthaceae	Spiny amara	D7	MENORRHAGIA	root	Root paste (5ml) along	

		nth				with honey and water applied for 21 days.	
Ambrosia cumanensis	Asteraceae	Altamis	D2	DYSMENORRHOEA	root		Lans et al., 2007
Aristolochia rugosa	Aristolochiaceae	Matroot	D2	DYSMENORRHOEA	root		Lans et al., 2007
Artemisia absinthium	Asteraceae	Wormwood	D4	IRREGULAR MENSTRUATION	Leaves and stems, fresh	Oral	Lans et al., 2007
Asparagus racemosus	Asparagaceae	shatavari	D9	REDUCED LACTATION	Tuberous root	Tuberous root powder is given orally.	Wadankar et al., 2011
Azadirachta indica	Meliaceae	Neem	D4	IRREGULAR MENSTRUATION	fruit	Fruit dust or paste (1 teaspoonful) mixed with water is applied.	Tripathi et al., 2010
Basella alba	Basellaceae	Malabar spinach	D3	INFERTILITY	Whole plant	Maceration is taken orally.	Focho et al., 2009
Bejaria aestuans	Ericaceae	payama	D2	DYSMENORRHOEA	Flower, leaf and stem, fresh or dried	Oral.	Busmann et al., 2010
Boerhavia diffusa	Nyctaginaceae	Hogweed	D6	LEUCORRHOEA	Whole plant	Decoction (15 ml) of plant is given once a day in the early morning continuousl	Sunanda et al., 2011

						y for 15 days.	
Bomarea angustifolia	Alstroemeriaceae		D3	INFERTILITY	Whole plant, dried	Oral.	
Bombax ceiba	Bombacaceae	Red silk cotton tree	D4	IRREGULAR MENSTRUATION	Fleshy root	Root paste of young plants (1 gm) mixed with raw cow milk (10 gms) is taken once a day in early morning for 7 days.	Tripathi et al.,2010
Bridelia micrantha	Euphorbiaceae	mitsee ri	D1	AMENORRHOEA	root	Roots are boiled with water to make decoction which is drunk.	
Butea monosperma	Fabaceae	palas	D1	AMENORRHOEA	Bark, flower	Tablets mixed with adequate water given early in the morning for 15 days.	Tripathi et al.,2010
Calotropis gigantea	Asclepiadaceae	Crown flower	D6	LEUCORRHOEA	root	Root decoction (3 ml) with Piper longum paste (1 gm) is given to women in	Tripathi et al.,2010



						empty stomach for continuously 10 days once a day.	
<i>Canna indica</i>	Cannaceae	Indian shot plant	D3	INFERTILITY	leaves	The leaves are dried, ground and the powder is then used or pounded, soaked in a small amount of water and a spoonful of it gave to the patient.	Moshi et al.,2012
<i>Capillipedium assimile</i>	Poaceae	Tooligha	D6	LEUCORRHOEA	stem	Stems are chewed.	Rawat et al.,2011
<i>Cassia reticulata</i>	Fabaceae	Golde n lantern tree	D2	DYSMENORRHOEA	leaf		Michel et al.,2007
<i>Catharanthus roseus</i>	Apocynaceae	Sadabahar	D7	MENORRHAGIA	leaf	Leaf juice (5 ml) mixed with honey is given in the early morning for continuous 7 days once a day.	Tripathi et al.,2010
<i>Cedrela odorata</i>	Meliaceae	Cedro rosa	D3	INFERTILITY	Leaves, bark	Infusion is taken orally.	Amri et al.,2012
<i>Ceiba pentandra</i>	Bombacaceae	Kapok tree	D7	MENORRHAGIA	Stem, gum	Tree gum is used. 5 gm stem	Tripathi et al.,2010

						powder mixed with warm milk is given twice a day.	
Centella asiatica	Apiaceae	Indian penny wort	D4	IRREGULAR MENSTRUATION	leaf	Leaf juice (2 spoonful) mixed with water is given for 7 days in empty stomach.	Tripathi et al.,2010
Chamaesyce hypericifolia	Euphorbiaceae	Graceful sandmat	D9	REDUCED LACTATION	Whole plant, fresh	Oral	Bussmann et al.,2010
Chitoria ternatea	Fabaceae	aparajita	D6	LEUCORRHOEA	root	One tea spoonful root paste with black pepper (Piper longum) mixed in water taken in the morning.	Tripathi et al.,2010
Cissampelos pareira	Menispermaceae	Abuta	D6	LEUCORRHOEA	root	Root paste is taken.	Rawat et al.,2011
Cissus quadrangularis	Vitaceae	Veld grape	D4	IRREGULAR MENSTRUATION	Stem	Stem juice is used.	Tripathi et al.,2010
Clerodendrum umbellatum	Labiatae	Umbel clerodendrum	D4	IRREGULAR MENSTRUATION	leaves		Kuete et al.,2010
Cordia curassavica	Boraginaceae	Black sage	D2	DYSMENORRHOEA	Leaves		Lans 2007

Cucurbita maxima	Cucurbitaceae	pumpkin	D7	MENORRHAGIA	fruit	The fruit is baked under ashes and squeezed into the vagina.	Moshi et al.,2011
Curculigo orchioides	Amaryllidaceae	Golden eye-grass	D5	LACK OF SEXUAL DESIRE	tuber	Powder of dried Kalimusli, Kalimirch and Illaichi is prepared in tablet form. Two capsules are taken in morning and evening after meal for 15 days.	Shukla et al.,2012
Cynodon dactylon	Poaceae	Indian doab	D8	OVARIAN CYSTS	Stems, dried	Oral	
Dalbergia sissoo	Fabaceae	sissoo	D7	MENORRHAGIA	leaves	Leaves with sugar is taken in the early morning.	Tripathi et al.,2010
Daphnopsis weberbaueri	Thymeleaceae	Cholitos	D3	INFERTILITY	Seeds, dried	Oral.	Bussmann et al.,2010
Desmodium heterocarpon	Fabaceae	Ovalifolium	D4	IRREGULAR MENSTRUATION	root	A cup of decoction of root is drunk in the morning for 7 days.	Rout et al.,2009
Dioscorea bolbifera	Dioscoreaceae	Air potato	D5	LACK OF SEXUAL	tuber	2 spoonful root paste	Tripathi et al.,2010

				DESIRE		mixed with cow milk and administered to women early in the morning for continuous 15 days.	
Dracaena steudneri	Asparagaceae	Bush night fighter	D3	INFERTILITY	leaves	The leaves are burnt and the ash is then combined with soda ash and the powder licked.	Moshi et al.,2011
Dyschoriste perrotteti	Acanthaceae	Snake herb	D3	INFERTILITY	leaves	Infusion is taken orally.	Focho et al.,2009
Embilca officinalis	Euphorbiaceae	Amla	D7	MENORRHAGIA	Fruit, seed	Fruit and seed dust (5 gm) mixed with honey administered for 7-10 days in empty stomach early in the morning.	Tripathi et al.,2010
Emilia coccinea	Asteraceae	Tassel flower	D2	DYSMENORRHOEA	Whole plant	Juice is taken orally.	Focho et al.,2009
Entandrophragma angolense	Meliaceae	Tiama	D3	INFERTILITY	bark	Concoction with barks of Ternstroemia is taken	Focho et al.,2009

						orally.	
Eragrostis cynosuroides	Poaceae	kusa	D7	MENORRHAGIA	root	2 spoonful roots paste mixed with warm milk is given for 15 days once daily in the early morning.	Tripathi et al.,2010
Eremomastix speciosa	Acanthaceae	Pangnyemhe	D3	INFERTILITY	leaves	Infusion of two plants (E.speciosa, Aloe vera) is taken orally.	Fonge et al.,2012
Erythrina sigmoidea	Leguminosae	Fulapular	D3	INFERTILITY	bark		Kuete et al.,2010
Euphorbia hirta	Euphorbiaceae	Asthma weed	D9	REDUCED LACTATION	leaf	Decoction of fresh leaf prepared with milk taken orally twice daily for 2-4 days.	Shukla et al.,2008
Feronia elephantum	Rutaceae	Kavit	D7	MENORRHAGIA	leaf	5 ml leaf juice mixed with honey is given once a day for 15-20 days.	Tripathi et al.,2010
Ficus bengalensis	Moraceae	Banyan tree	D7	MENORRHAGIA	Root, bark	1 tea spoonful paste mixed with honey is given once a day	Tripathi et al.,2010

						for 15 days.	
Geranium nepalense	Geraniaceae	Nepal geranium	D4	IRREGULAR MENSTRUATION	Whole plant	Decoction of plant is used.	Rawat et al.,2011
Hemidesmus indicus	Asclepiadaceae	anantmul	D9	REDUCED LACTATION	root	Paste of fresh root is prepared and taken orally in morning and evening twice daily for 2-4 days.	Shukla et al.,2008
Hibiscus rosa sinesis	Malvaceae	China rose	D1	AMENORRHOEA	flower	Paste of flowers (3 gms) along with cow milk is taken.	Lans 2007
Holarrhena antidysenterica	Apocynaceae	Bitter oleander	D7	MENORRHOEA	seeds	Seeda in "Halwa" consumed.	Rawat et al.,2011
Hygrophila schulli	Acanthaceae	Marsh barbel	D6	LEUCORRHOEA	Seed	Seed paste or dust mixed sugar and milk is used.	Tripathi et al.,2010
Ipomoea batatas	Convolvulaceae	Sweet potato	D9	REDUCED LACTATION	Whole plant, fresh	Oral	
Justicia breviflora	Acanthaceae	nees	D7	MENORRHOEA	leaf		Michel et al.,2007
Leucus aspera	Lamiaceae	Chottahalkusa	D1	AMENORRHOEA	Leaf	1 tea spoonful leaf juice mixed with honey is	Tripathi et al.,2010

						applied for 15-20 days in empty stomach.	
Lycopersicon esculentum	Solanaceae	Tomato	D4	IRREGULAR MENSTRUATION	flower	Powder of dried flowers is used.	Rawat et al.,2011
Mangifera indica	Anacardiaceae	mango	D7	MENORRHAGIA	seed	Seed powder is used to cure.	Tripathi et al.,2010
Malva parviflora	Malvaceae	Cheese weed	D4	IRREGULAR MENSTRUATION	Tender shoot and seed	Decoction of tender shoots and seeds are given orally.	Singh et al.,2012
Michelia champaca	Magnoliaceae	michelia	D4	IRREGULAR MENSTRUATION	Stem bark	Dried stem bark (2 gms) mixed with water is administered twice a day for 15 days.	Tripathi et al.,2010
Millettia griffoniana	Leguminosae		D1	AMENORRHOEA	Bark, root		Kuete et al.,2010
Mimosa pudica	Fabaceae	Humble plant	D6	LEUCORRHOEA	Entire plant	Decoction of plant is given.	Singh et al.,2012
Momordica charantia	Cucurbitaceae	Bitter melon	D1	AMENORRHOEA	leaf		Michel et al.,2007
Mucuna pruriens	Fabaceae	Velvet bean	D6	LEUCORRHOEA	seed	A pill prepared from powdered seeds boiled with	Tripathi et al.,2010

						cow milk mixed with kamraj (Buettneria herbaceae) rot dust, sugar and honey is given to cure.	
Neurolaena lobata	Asteraceae	gavilana	D2	DYSMENORRHOEA	leaf		Michel et al.,2007
Nyctanthes arbortristis	Nyctanginaceae	Night jasmine	D7	MENORRHAGIA	Whole plant	2 spoonful paste mixed with honey is given for 15 days.	Tripathi et al.,2010
Nymphaea nouchali	Nymphaeaceae	Blue water lily	D4	IRREGULAR MENSTRUATION	rhizome	2 spoonful paste mixed with honey is administered for 7 days twice daily.	Tripathi et al.,2010
Ocimum gratissimum	Lamiaceae	basil	D9	REDUCED LACTATION	leaves	Consumption of cooked leaves in soup.	
Passiflora quadrangularis	passifloraceae	granadilla	D2	DYSMENORRHOEA	Leaves, fresh	Oral.	Bussmann et al.,2010
Peucedanum nagpurensis	Apiaceae	Tejraj	D5	LACK OF SEXUAL DESIRE	Whole plant	Powder of Tejrai, Bhojrai (seed), Tejpatra (leaf) and Mishri is prepared.	Shukla et al.,2008



						One spoon of powder is taken with one cup milk at night for 21 days.	
Petroselinum crispum	Apiaceae	parsley	D4	IRREGULAR MENSTRUATION	Whole plant, fresh	Oral	
Phyllanthus nodiflora	Verbenaceae	Frog fruit	D5	LACK OF SEXUAL DESIRE	root	Decoction of root (3 mlk) with unboiled egg (2 gms) is taken by women.	Sunanda et al.,2011
Phyllanthus niruri	Euphorbiaceae	bahupatra	D7	MENORRHAGIA	Whole plant	1 tea spoonful paste mixed with water is given for 7-10 days.	Tripathi et al.,2010
Piper hispidum	Piperaceae	bayuyoo	D1	AMENORRHOEA	Leaf		Michel et al.,2007
Pittosporum mannii	Pittosporaceae	Cheese wood	D1	AMENORRHOEA	bark	Infusion of equal parts of P.mannii and B. micrantha adding honey is taken orally.	Focho et al.,2009
Porana racemosa	Convolvulaceae	creeper	D7	MENORRHAGIA	Whole plant	Extract of plant is used.	Rawat et al.,2011
Pouteria lucuma	Rutaceae	lucuma	D9	REDUCED LACTATION	Fruit, fresh	oral	Bussmann et al.,2010
Pterocarpus	Fabaceae	Kanak	D6	LEUCORRHOEA	flower	Flower	Tripathi et

acerifolium		champa		EA		tonic is used.	al.,2010
Pterospermum marsupium	Fabaceae	piasal	D6	LEUCORRHOEA	bark	Paste of bark (1 tea spoonful) mixed with honey.	Tripathi et al.,2010
Punica granatum	Puniaceae	pomegranate	D6	LEUCORRHOEA	flower	Paste of flower (1 tea spoonful) mixed with honey and warm milk is used.	Tripathi et al.,2010
Raphanus sativus	Cruciferae	radish	D4	IRREGULAR MENSTRUATION	root		Wadankar et al.,2011
Ricinus communis	Euphorbiaceae	Castor bean	D4	IRREGULAR MENSTRUATION	leaf	Leaf juice (2 spoonful) mixed with honey applied in empty stomach for 15 days.	Tripathi et al.,2010
Rubia cordifolia	Rubiaceae	Indian madder	D4	IRREGULAR MENSTRUATION	root	Root decoction is used.	Rawat et al.,2011
Ruta graveolens	Rutaceae	Herb of grace	D2	DYSMENORRHOEA	Leaves		Lans 2007
Salvia officinalis	Lamiaceae	sage	D4	IRREGULAR MENSTRUATION	Whole plant, fresh or dried	Oral	Busmann et al.,2010
Sanguisorba minor	Rosaceae	Salad burnet	D4	IRREGULAR MENSTRUATION	Whole plant, fresh	Oral	Busmann et al.,2010

Sambucus ebulus	Adoxacea e	Dwarf elder	D2	DYSMENOR RHOEA	fruit	Tincture	Mustafa et al.,2012
Saraca asoca	Caesalpin eacea	ashok	D2	DYSMENOR RHOEA	bark	Dried bark paste or tablet mixed with water is given for continuous 21 days.	Tripathi et al.,2010
Sarcostemm a clausum	Asclepiad aceae	White twine vine	D9	REDUCED LACTATION	Leaves, stems, fresh	Oral	
Satureja robusta	Lamiaceae	West camer oons	D2	DYSMENOR RHOEA	leaves	Infusion is taken orally.	Focho et al.,2009
Scabiosa atropurea	Dipsacace ae	Sweet scabio sa	D4	IRREGULAR MENSTRUAT ION	Flower, fresh	Oral or inhaled	Busmann et al.,2010
Schkuhria pinnata	Asteracea e	cancha lagua	D4	IRREGULAR MENSTRUAT ION	Whole plant, fresh	Oral	Busmann et al.,2010
Semecarpus anacardium	Anacardia ceae	Marki ng nut	D7	MENORRHA GIA	seed	Seed dust (2 gm) mixed with honey and cow milk is applied.	Tripathi et al.,2010
Sida acuta	Malvaceae	Broom weed	D6	LEUCORRHO EA	seed	Seed dust (1 tea spoonful) mixed with water is given for 7- 10 days continuousl y.	Tripathi et al.,2010
Solanum aculeastrum	Solanacea e	Bitter- apple	D1	AMENORRH OEA	Fruit, bark	Fruits are burnt and the	Focho et al.,2009

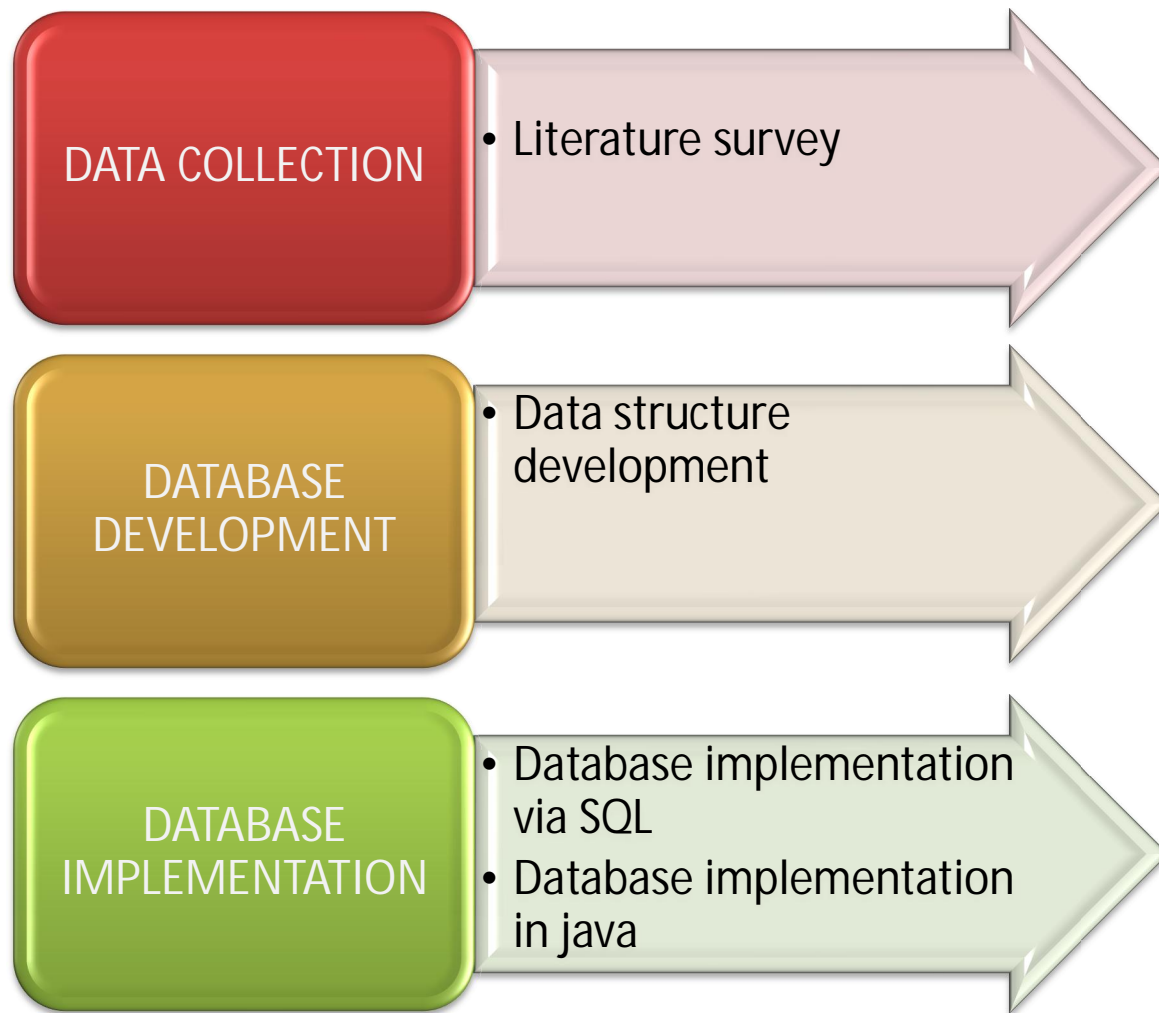
						pulverized charcoal is mixed with red oil and salt, and taken orally.	
Solanum americanum	Solanaceae	American black nightshade	D2	DYSMENORRHOEA	Leaf		Michel et al.,2007
Solanum gilo	Solanaceae	Scarlet egg plant	D9	REDUCED LACTATION	fruit	Fresh fruits eaten.	
Spondias pinnata	Anacardiaceae	Wild mango	D4	IRREGULAR MENSTRUATION	root	Root paste is used.	
Stephania japonica	Menispermaceae	Tape wine	D6	LEUCORRHOEA	leaf	10 ml leaf juice mixed with honey and cow milk is given once a day for continuous 21 days.	Tripathi et al.,2010
Strychnos nux vomica	Loganiaceae	Quaker buttons	D5	LACK OF SEXUAL DESIRE	seed	Seed powder (1 gm) mixed with water is given to women for continuous 7 days on empty stomach.	Tripathi et al.,2010
Tamarindus indica	Caesalpiniaceae	tamarind	D7	MENORRHAGIA	fruit	Fruit paste (2 gm) mixed with	Tripathi et al.,2010

						1 tea spoonful honey and one glass of milk is given to women.	
Terminalia arjuna	Combretaceae	arjuna	D7	MENORRHAGIA	bark	Bark powder cooked in butter taken orally.	Rawat et al.,2011
Ternstroemia	Theaceae	Cleyera	D3	INFERTILITY	bark	Decoction of bark is taken orally.	Focho et al.,2009
Tinospora cordifolia	Menispermaceae	Giloy	D7	MENORRHAGIA	stem	Stem starch roasted with butter and wheat flour is used.	Rawat et al.,2011
Trigonella foenum-graecum	Fabaceae	methi	D2	DYSMENORRHOEA	seed	Seed powder taken with warm water.	Rawat et al.,2011
Urginea altissima	Liliaceae	Tall white squill	D8	OVARIAN CYSTS	bulb	Pulverized bulbs are boiled; pure honey is added and taken orally.	Focho et al.,2009
Urtica massaiica	Urticaceae	Forest nettle	D2	DYSMENORRHOEA	root	Crushed and extract drunk four teaspoons twice a day.	Kamatenesi et al.,2011
Vernonia	Asteraceae	Ash-	D6	LEUCORRHOEA	Leaf,	Chewed	

cinerea	e	coloured fleabane		EA	root	locally or boiled material is taken.	
Wedelia chinensis	Asteraceae	Kumano- giku	D7	MENORRHAGIA	Whole plant	5 ml decoction mixed with water given to women for continuous 21 days in empty stomach.	Tripathi et al.,2010
Withania somnifera	Solanaceae	Aswagandha	D6	LEUCORRHOEA	root	1-2 gm root dust with warm milk given twice or thrice a day until cure.	Tripathi et al.,2010
Woodfordia fruticosa	Lythaceae	shinajitea	D6	LEUCORRHOEA	Dried flower	5 gms dried flower mixed with 5 ml honey is given to women once a day continuously for one month.	Tripathi et al.,2010
Ximena americana	Olacaceae	Yellow plum	D4	IRREGULAR MENSTRUATION	Whole plant, fresh or dried	Oral	Bussmann et al.,2010
Xylopia aethiopica	Annonaceae	uda	D9	REDUCED LACTATION	seed	Soup prepared with ground seeds and	

						other ingredients is taken.	
Zebrina pendula	Commelinaceae	Wandering jew	D2	DYSMENOR RHOEA	leaf		Michel et al.,2007
Zingiber officinale	Zingiberaceae	ginger	D2	DYSMENOR RHOEA	rhizome		Michel et al.,2007

### 3.METHODOLGY



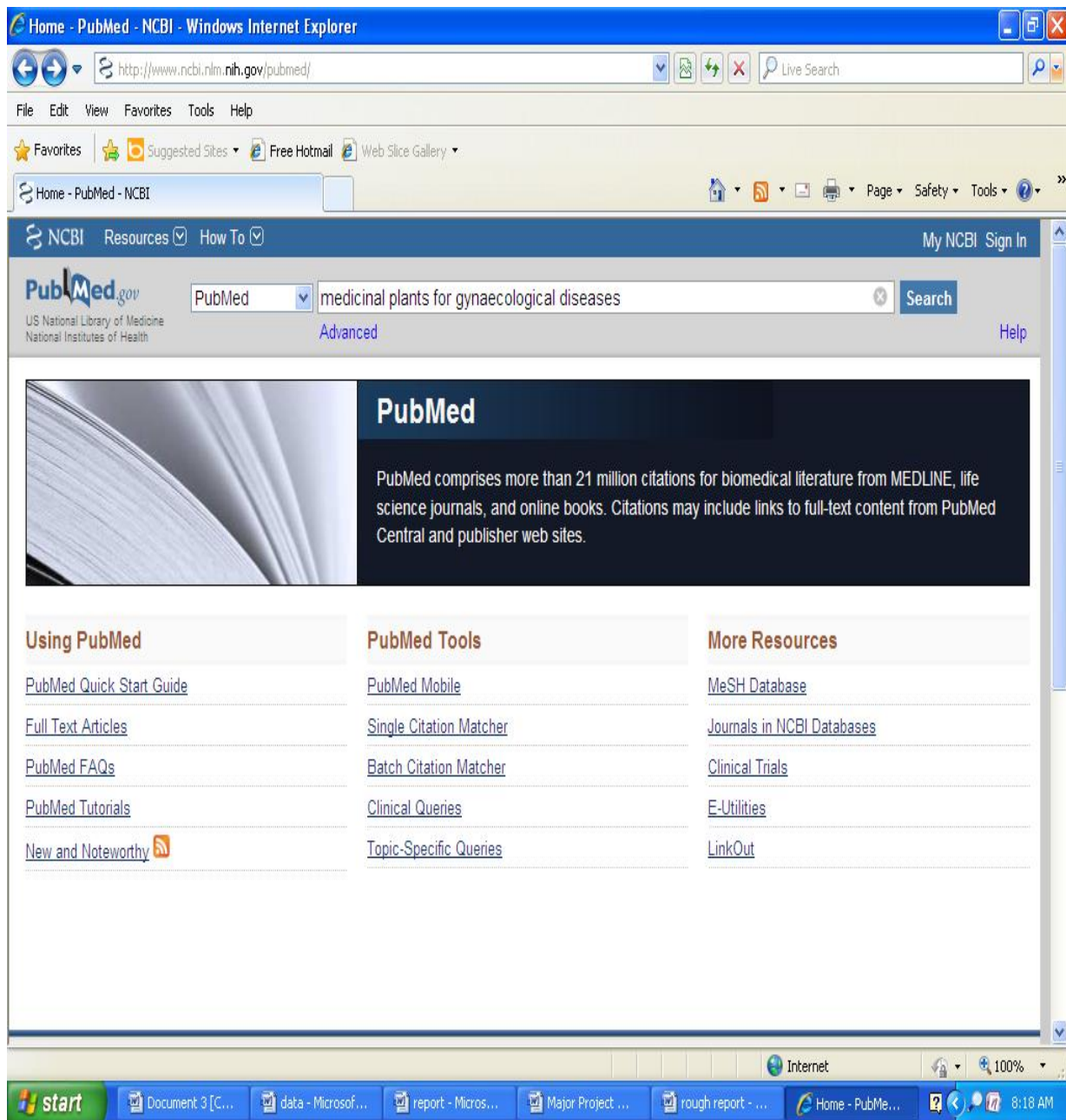
**Figure 3:** Methodology

The database of medicinal plants for the treatment of gynaecological disorders was developed after an exhaustive literature research. Information on medicinal plants used for different gynaecological diseases were collected by literature survey. The indigenous knowledge about the use of medicinal plants was arranged in alphabetical order of scientific names followed by family, common name, part used and route of administration. The data was collected randomly from various research papers.



### 3.1 Data collection

Data were collected from various literature resources such as Bio Med Central, ijpls journal, Journal of Ethnobiology and Ethno-medicine and others. The literature retrieved was manually studied to extract relevant desired information.



**Figure 4:** PubMed Homepage

The data was extracted from the literature under following several headings:

- Disease associated
- Scientific name of the plant
- Family
- Common name
- Plant part used
- Method of preparation/ Route of administration

PubMed is a free database accessing primarily the MEDLINE database of references and abstracts on life sciences and biomedical topics. The United States National Library of Medicine (NLM) at the National Institutes of Health maintains the database as part of the Entrez information retrieval system. Pubmed was queried using keywords ‘medicinal plants for gynaecological diseases’.

### 3.2 Database development

<b>DISEASE ID</b>	<b>DISEASE</b>
D1	AMENORRHOEA
D2	DYSMENORRHOEA
D3	INFERTILITY
D4	IRREGULAR MENSTRUATION
D5	LACK OF SEXUAL DESIRE
D6	LEUCORRHOEA
D7	MENORRHAGIA
D8	OVARIAN CYSTS
D9	REDUCED LACTATION

**Table 3:** Disease table

#### Data Structure Development

A relational database management system (RDBMS) approach was used for developing the database structure. Data is divided into various tables linked by unique keywords for efficient data retrieval. Different tables were created by the SQL(Structured Query Language) to manage the huge data collected for medicinal plants associated for various gynaecological diseases treatment.

### 3.3 Database implementation

SQL language was used to implement the database. SQL coding was used to create the tables. Jsp pages were developed using Java platform. Then these pages were connected to library. By using interface, tables were created and then the data was inserted into the tables.

To load the data into the tables the SQL coding was implemented. The user interface of the database is developed using JAVA.

#### **CODING:**

```
CREATE TABLE `dis_d1` (  
  `SCIENTIFIC_NAME_OF_THE_PLANT` varchar(50) NOT NULL,  
  `FAMILY` varchar(50) NOT NULL,  
  `COMMON_NAME` varchar(50) NOT NULL,  
  `PLANT_PART_USED` varchar(50) NOT NULL,  
  `METHOD_OF_REPARATION_ROUTE_OF_ADMINISTRATION` varchar(100) NOT  
  NULL  
)
```

```
CREATE TABLE `disease_master` (  
  `DISEASE_ID` varchar(25) NOT NULL,  
  `DISEASE` varchar(50) NOT NULL,  
  PRIMARY KEY (`DISEASE_ID`)  
)
```

```
LOAD DATA INFILE 'data.txt' INTO TABLE tbl_name
```

FIELDS TERMINATED BY ',' ENCLOSED BY ''''

LINES TERMINATED BY '\r\n'

IGNORE 1 LINES;

LOAD DATA INFILE 'C:/Documents and Settings/tomy/Desktop/D1.csv' INTO TABLE dis\_d1

FIELDS TERMINATED BY ',' ENCLOSED BY ''''

LINES TERMINATED BY '\r\n'

IGNORE 1 LINES;

<b>DISEASE ID</b>	<b>SCIENTIFIC NAME OF THE PLANT</b>	<b>FAMILY</b>	<b>COMMON NAME</b>	<b>PLANT PART USED</b>	<b>METHOD OF PREPARATION/ROUTE OF ADMINISTRATION</b>

**Table 4:** Table used for entering the data of different diseases.

## 4. RESULTS AND DISCUSSION

Huge data were collected: more than 100 medicinal plants associated with gynaecological diseases treatment. The data was extracted from the literature under several headings: The correct botanical name is followed by family, local name, part used with their route of administration. This study represented a brief account of the uses of various medicinal plants parts against the gynaecological disorders.

A total of 121 plant species belonging to different-different families were documented and identified as cure for 9 gynaecological diseases.

- Amenorrhoea
- Dysmenorrhoea
- Infertility
- Irregular menstruation
- Lack of sexual desire
- Leucorrhoea
- Menorrhagia
- Ovarian cysts
- Reduced lactation

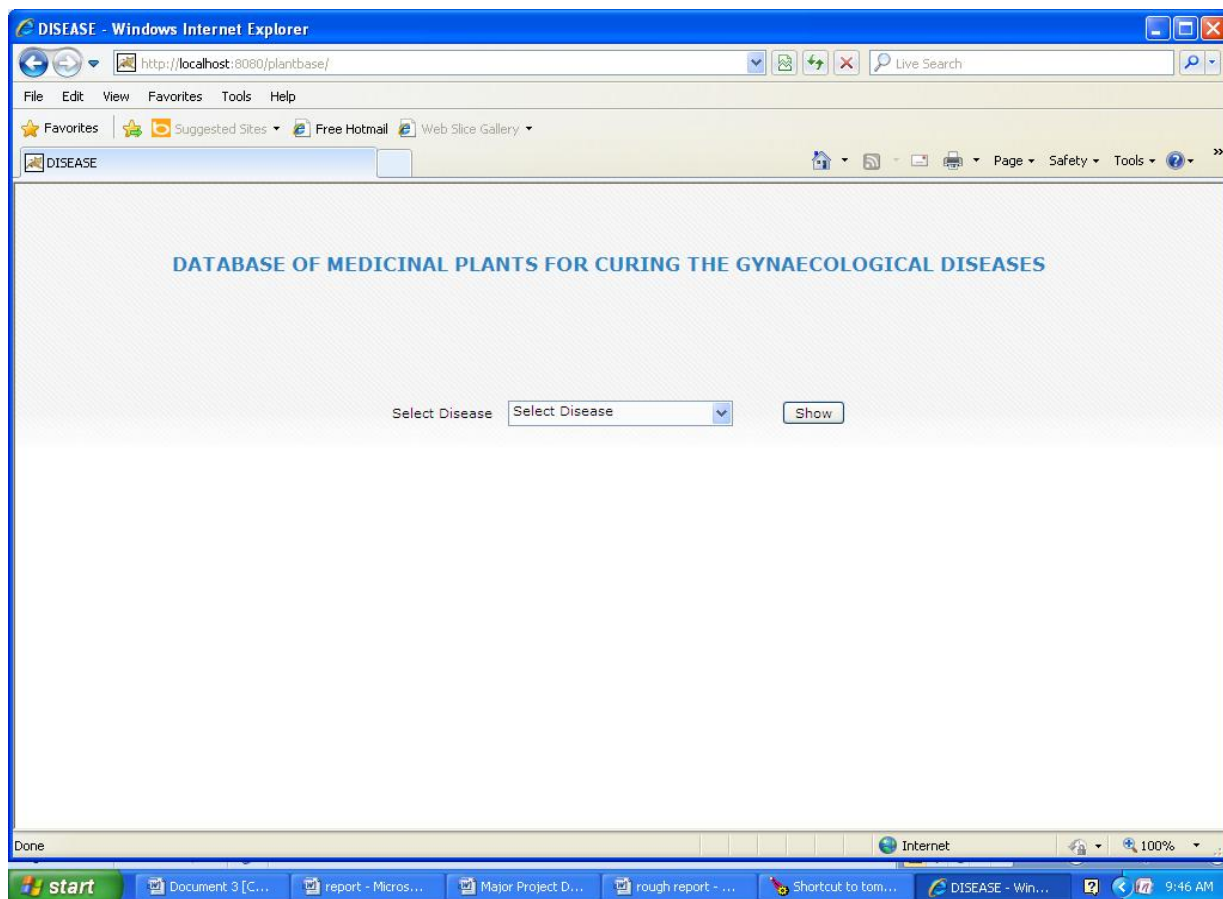
In India, about 7300 plant species are used in traditional health care system such as Ayurveda, Siddha, Unani, and folk healing practices. The use of plant species as remedies is probably an ancient as man himself. Due to lack of interest among younger generation as well as their tendency to migrate to cities for lucrative jobs, there is a possibility of losing this wealth of knowledge in the near future. There is a great need to create awareness among the communities about endangering medicinal plants. It was thus became necessary to preserve this traditional system of medicine by proper documentation and identification of specimens. Proper documentation of medicinal plant knowledge could be supportive. This study revealed the use of 121 plant species belonging to different families which are used for the treatment of gynaecological problems among womens. The data on medicinal plants for treatment of various gynaecological disorders was collected and analysed. The mode of administration of the herbal treatments varies greatly, ranging from oral administration (drinking, chewing and eating), topical application and rubbing. Similarly, the method of preparation varied widely, which include infusion, decoction, maceration, squeezing, burning, boiling (in water), drying and pulverization into powder and many other variant methods. The majority of herbal preparations for reproductive issues were prepared from the leaves of plants, the whole plant, and stems, while other plant parts were used much less frequently. In most of the cases fresh plant material was used to prepare remedies. Oral administration appears to be the most widely used method for herbal medicine administration. It was found that some combination by using more than one

plant part were also prepared by applying more than one method of preparation. It was observed that most of the medicines were administered in empty stomach early in the morning and period of treatment varies from 7 to 21 days in most of the cases. Doses were measured generally in teaspoonful or in milliliter. Besides gynaecological disorders, some plant species are used to treat other diseases also. The medicinal preparations are practiced in day to day life of people living in remote forest or village. The use of herbal medicines is wide spread in those regions with higher percentage of population relying on it. This is because of lack of awareness; shyness and lack of modern medical facilities available in their region and the high cost of medical system for treatment are unaffordable by them.

Link of the database is: <http://localhost:8080/plantbase/>

### Database homepage description:

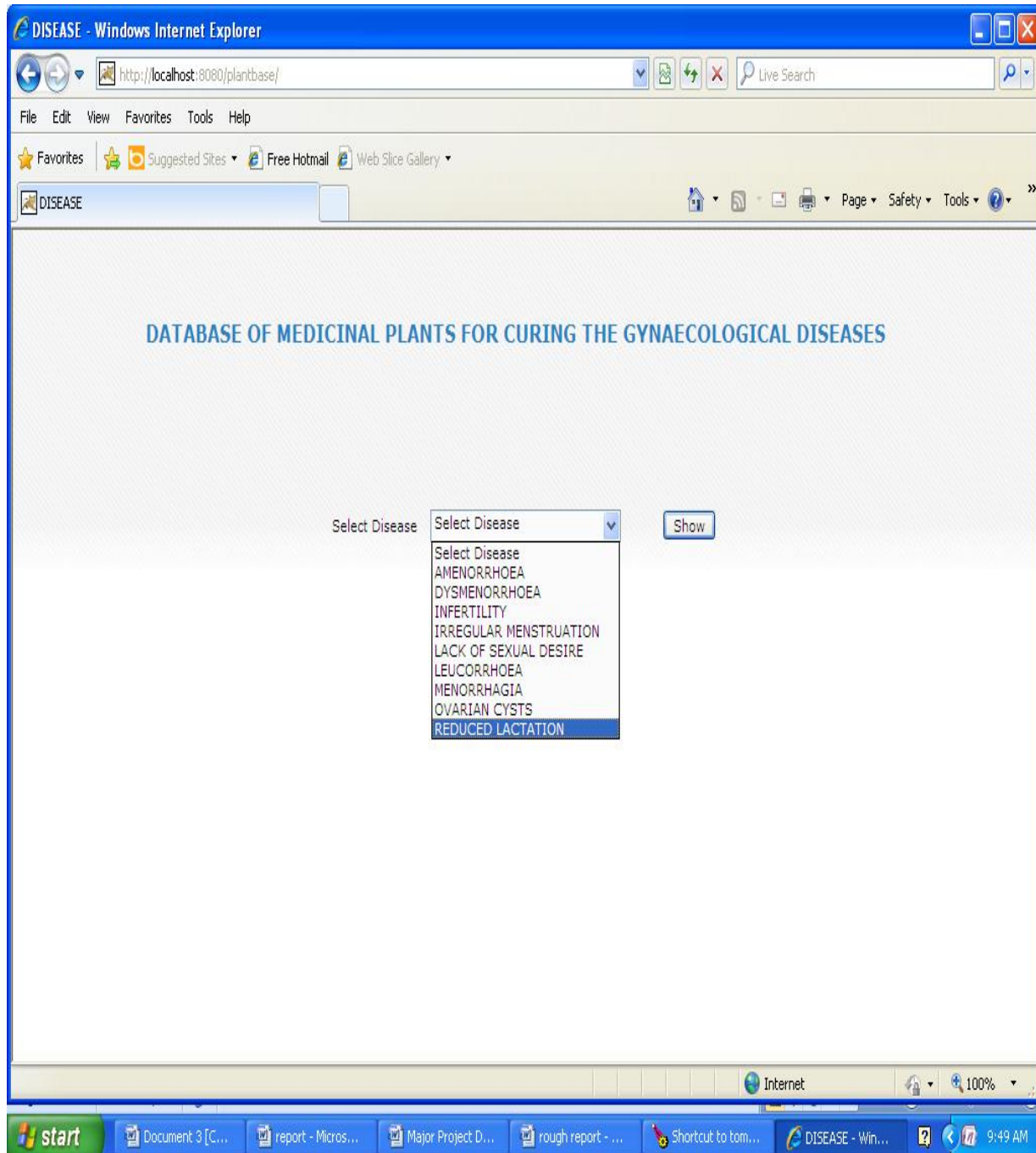
The homepage of database allows us for selecting a particular disease. It gives the information of diseases.



**Figure 5:** Homepage of the database

## Querying the database:

The front page of the database contains a unique query system. The database can be queried by selecting the disease from top down list of different diseases.



**Figure 6:** Query system for the database

## Sample Query Run:

To retrieve desired information from the database. Click on a particular disease and then click show to see the complete list of all the medicinal plants having all information used to cure that disease. The following result pages having whole information of all the plants treating 9 gynaecological disease opens. These pages gives a detailed description of all the plants. i.e., Scientific name of the plant, family, common name, plant part used, Method of preparation/ Route of administration and dosage administered to the patients.

**DATABASE OF MEDICINAL PLANTS FOR CURING THE GYNAECOLOGICAL DISEASES**

Select Disease

**Disease: AMENORRHOEA**

SCIENTIFIC NAME OF THE PLANT	FAMILY	COMMON NAME	PLANT PART USED	METHOD OF PREPARATION/ROUTE OF ADMINISTRATION
Achyranthes aspera	Amaranthaceae	Chaff-flower	leaf	3ml fresh leaf decoction given orally for 7-15 days once or twice a day.
Bridelia micrantha	Euphorbiaceae	mitseeri	root	Roots are boiled with water to make decoction which is drank.
Butea monosperma	Fabaceae	palas	Bark, flower	Tablets mixed with adequate water given early in the morning for 15 days.
Hibiscus rosa sinensis	Malvaceae	China rose	flower	Paste of flowers (3 gms) along with cow milk is taken.
Leucus aspera	Lamiaceae	Chotta halkusa	Leaf	1 tea spoonful leaf juice mixed with honey is applied for 15-20 days in empty stomach.
Millettia griffoniana	Leguminosae		Bark, root	
Momordica charantia	Cucurbitaceae	Bitter melon	leaf	
Piper hispidum	Piperaceae	bayuyo	Leaf	
Pittosporum mannii	Pittosporaceae	Cheese wood	bark	Infusion of equal parts of P.mannii and B. micrantha adding honey is taken orally.
Solanum aculeastrum	Solanaceae	Bitter-apple	Fruit, bark	Fruits are burnt and the pulverized charcoal is mixed with red oil and salt, and taken orally.

**Figure 7:** Data entry for Amenorrhoea.



DISEASE - Windows Internet Explorer

http://localhost:8080/plantbase/PlantServlet?disease=DYSMENORRHOEA

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DISEASE

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### DATABASE OF MEDICINAL PLANTS FOR CURING THE GYNAECOLOGICAL DISEASES

Select Disease

**Disease: DYSMENORRHOEA**

SCIENTIFIC NAME OF THE PLANT	FAMILY	COMMON NAME	PLANT PART USED	METHOD OF PREPARATION/ROUTE OF ADMINISTRATION
Acanthus montanus	Acanthaceae	Mountain thistle	leaves	Leaves are taken orally.
Alchemilla cryptantha	Rosaceae		Whole plant	Decoction is taken orally.
Allium cepa	Liliaceae	piaz	bulb	Bulbs boiled with mustard oil massaged.
Ambrosia cumanensis	Asteraceae	Altamis	root	
Aristolochia rugosa	Aristolochiaceae	Mat root	Root	
Bejaria aestuans	Ericaceae	payama	Flower, leaf and stem, fresh or dried	Oral.
Cassia reticulata	Fabaceae	Golden lantern tree	leaf	
Cordia curassavica	Boraginaceae	Black sage	Leaves	
Emilia coccinea	Asteraceae	Tassel flower	Whole Plant	Juice is taken orally.
Neurolaena lobata	Asteraceae	gavilana	leaf	
Passiflora quadrangularis	passifloraceae	granadilla	Leaves, fresh	Oral.
Ruta grave olens	Rutaceae	Herb of grace	Leaves	
Sambucus ebulus	Adoxaceae	Dwarf elder	fruit	Tincture
Saraca asoca	Caesalpiniaceae	ashok	bark	Dried bark paste or tablet mixed with water is given for continuous 21 days
Satureja robusta	Lamiaceae	West cameroons	leaves	Infusion is taken orally.
Solanum americanum	Solanaceae	American black nightshade	Leaf	

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**Figure 8:** Data entry for Dysmenorrhoea.

DISEASE - Windows Internet Explorer

http://localhost:8080/plantbase/PlantServlet?disease=INFERTILITY

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DISEASE

### DATABASE OF MEDICINAL PLANTS FOR CURING THE GYNAECOLOGICAL DISEASES

Select Disease

**Disease: INFERTILITY**

SCIENTIFIC NAME OF THE PLANT	FAMILY	COMMON NAME	PLANT PART USED	METHOD OF PREPARATION/ROUTE OF ADMINISTRATION
Abrus precatorius	Fabeceae	Rosary pea	root	Decoction is taken orally.
Albizia lebbeck	Mimosaceae	tiam	bark	Decoction with raphia palm wine is taken orally.
Basella alba	Basellaceae	Malabar spinach	Whole plant	Maceration is taken orally.
Bomarea angustifolia	Alstroemeriaceae		Whole plant, dried	Oral.
Canna indica	Cannaceae	Indian shot plant	leaves	The leaves are dried, ground and the powder is then used or pounded, soaked in a small amount of water and a spoonful of it gave to the patient.
Cedrela odorata	Meliaceae	Cedro rosa	Leaves, bark	Infusion is taken orally.
Daphnopsis weberbaueri	Thymeleaceae	Cholitos	Seeds, dried	Oral.
Dracaena steudneri	Asparagaceae	Bush nightfighter	leaves	The leaves are burnt and the ash is then combined with soda ash and the powder licked.
Dyschoriste perrotteti	Acanthaceae	Snakeherb	leaves	Infusion is taken orally.
Entandrophragma angolense	Meliaceae	Tiama	bark	Concoction with barks of Ternstroemia is taken orally.
Eremomastax speciosa	Acanthaceae	Pang nyemshe	leaves	Infusion of two plants (E.speciosa, Aloe vera) is taken orally.
Erythrina sigmoidea	Leguminosae	Fula - pulaar	bark	
Ternstroemia	Theaceae	Cleyera	bark	Decoction of bark is taken orally.

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**Figure 9:** Data entry for Infertility

DISEASE - Windows Internet Explorer

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## DATABASE OF MEDICINAL PLANTS FOR CURING THE GYNAECOLOGICAL DISEASES

Select Disease

### Disease: IRREGULAR MENSTRUATION

SCIENTIFIC NAME OF THE PLANT	FAMILY	COMMON NAME	PLANT PART USED	METHOD OF PREPARATION/ROUTE OF ADMINISTRATION
Adiantum concinum	Adiantaceae	Polished maidenhair	Leaves and stems, fresh	Oral
Aloe vera	Liliaceae	True aloe	leaves	Leaf pith vegetable is used
Artemisia absinthium	Asteraceae	Wormwood	Leaves and stems, fresh	Oral
Azadirachta indica	Meliaceae	Neem	fruit	Fruit dust or paste (1 teaspoonful) mixed with water is applied.
Bombax ceiba	Bombacaceae	Red silk cotton tree	Fleshy root	Root paste of young plants (1 gm) mixed with raw cow milk (10 gms) is taken once a day in early morning for 7 days.
Centella asiatica	Apiaceae	Indian pennywort	leaf	Leaf juice (2 spoonful) mixed with water is given for 7 days in empty stomach.
Cissus quadrangularis	Vitaceae	Veld grape	Stem	Stem juice is used.
Clerodendrum umbellatum	Labiatae	Umbel clerodendrum	leaves	
Desmodium heterocarpon	Fabaceae	Ovalifolium	root	A cup of decoction of root is drunk in the morning for 7 days
Geranium nepalense	Geraniaceae	Nepal geranium	Whole plant	Decoction of plant is used.
Lycopersicon esculentum	Solanaceae	Tomato	flower	Powder of dried flowers is used.
			Tender shoot and	

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**Figure 10:** Data entry for Irregular menstruation

DISEASE - Windows Internet Explorer

http://localhost:8080/plantbase/PlantServlet?disease=LACK+OF+SEXUAL+DESIRE

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DISEASE

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## DATABASE OF MEDICINAL PLANTS FOR CURING THE GYNAECOLOGICAL DISEASES

Select Disease

**Disease: LACK OF SEXUAL DESIRE**

SCIENTIFIC NAME OF THE PLANT	FAMILY	COMMON NAME	PLANT PART USED	METHOD OF PREPARATION/ROUTE OF ADMINISTRATION
Curculigo orchoides	Amaryllidaceae	Golden eye-grass	tuber	Powder of dried Kalimusli, Kalimirch and Illaichi is prepared in tablet form. Two capsules are taken in morning and evening after meal for 15 days.
Dioscorea bolbifera	Dioscoreaceae	Air potato	tuber	2 spoonful root paste mixed with cow milk and administered to women early in the morning for continuous 15 days.
Peucedanum nagpurens	Apiaceae	tejraj	Whole plant	Powder of Tejraj, Bhojraj (seed), Tejpatra (leaf) and Mishri is prepared. One spoon of powder is taken with one cup milk at night for 21 days.
Phyla nodiflora	Verbenaceae	frogfruit	root	Decoction of root (3 mlk) with unboiled egg (2 gms) is taken by women.
Strychnos nux vomica	Loganiaceae	Quaker buttons	seed	Seed powder (1 gm) mixed with water is given to women for continuous 7 days on empty stomach.

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**Figure 11:** Data entry for Lack of sexual desire.

DISEASE - Windows Internet Explorer

http://localhost:8080/plantbase/PlantServlet?disease=LEUCORRHOEA

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## DATABASE OF MEDICINAL PLANTS FOR CURING THE GYNAECOLOGICAL DISEASES

Select Disease

**Disease: LEUCORRHOEA**

SCIENTIFIC NAME OF THE PLANT	FAMILY	COMMON NAME	PLANT PART USED	METHOD OF PREPARATION/ROUTE OF ADMINISTRATION
Boerhavia diffusa	Nyctaginaceae	Hog weed	Whole plant	Decoction (15 ml) of plant is given once a day in the early morning continuously for 15 days.
Calotropis gigantea	Asclepiadaceae	Crown flower	root	Root decoction (3 ml) with Piper longum paste (1 gm) is given to women in empty stomach for continuously 10 days once a day.
Capillipedium assimile	Poaceae	Tooligha	stem	Stems are chewed.
Chitoria ternatea	Fabaceae	aparajita	root	One tea spoonful root paste with black pepper (Piper longum) mixed in water taken in the morning.
Cissampelos pareira	Menispermaceae	Abuta	root	Root paste is taken.
Hygrophila schulli	Acanthaceae	Marsh barbel	Seed	Seed paste or dust mixed sugar and milk is used.
Mimosa pudica	Fabaceae	Humble plant	Entire plant	Decoction of plant is given
Mucuna pruriens	Fabaceae	Velvet bean	seed	A pill prepared from powdered seeds boiled with cow milk mixed with kamraj (Buettneria herbaceae) root dust, sugar and honey is given to cure.
Pterocarpus acerifolium	Fabaceae	Kanak champa	flower	Flower tonic is used.
Pterospermum marsupium	Fabaceae	piasal	bark	Paste of bark (1 tea spoonful) mixed with honey.
Punica granatum	Puniaceae	pomegranate	flower	Paste of flower (1 tea spoonful) mixed with honey and warm milk is used.
Sida acuta	Malvaceae	Broom weed	seed	Seed dust (1 tea spoonful) mixed with water is given for 7-10 days continuously.
Stephania japonica	Menispermaceae	Tape wine	leaf	10 ml leaf juice mixed with honey and cow milk is given once a day for continuous 21 days.

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**Figure 12:** Data entry for Leucorrhoea

DISEASE - Windows Internet Explorer

http://localhost:8080/plantbase/PlantServlet?disease=MENORRHAGIA

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### DATABASE OF MEDICINAL PLANTS FOR CURING THE GYNAECOLOGICAL DISEASES

Select Disease

#### Disease: MENORRHAGIA

SCIENTIFIC NAME OF THE PLANT	FAMILY	COMMON NAME	PLANT PART USED	METHOD OF PREPARATION/ROUTE OF ADMINISTRATION
Acacia farnesiana	Mimosaceae	Sweet acacia	bark	Bark soaked in water and applied 7-10 days continuously.
Amaranthus spinous	Amaranthaceae	Spiny amaranth	root	Root paste (5ml) along with honey and water applied for 21 days.
Catharanthus roseus	Apocynaceae	Sadabahar	leaf	Leaf juice (5 ml) mixed with honey is given in the early morning for continuous 7 days once a day.
Ceiba pentandra	Bombacaceae	Kapok tree	Stem, gum	Tree gum is used. 5 gm stem powder mixed with warm milk is given twice a day.
Cucurbita maxima	Cucurbitaceae	pumpkin	fruit	The fruit is baked under ashes and squeezed into the vagina.
Dalbergia sissoo	Fabaceae	sissoo	leaves	Leaves with sugar is taken in the early morning.
Emblica officinalis	Euphorbiaceae	Amla	Fruit, seed	Fruit and seed dust (5 gm) mixed with honey administered for 7-10 days in empty stomach early in the morning.
Eragrostis cynosuroides	Poaceae	kusa	root	2 spoonful roots paste mixed with warm milk is given for 15 days once daily in the early morning.
Feronia elephantum	Rutaceae	Kavit	leaf	5 ml leaf juice mixed with honey is given once a day for 15-20 days.
Ficus bengalensis	Moraceae	Banyan tree	Root, bark	1 tea spoonful paste mixed with honey is given once a day for 15 days.
Holarrhena antidysentrica	Apocynaceae	Bitter oleander	seeds	Seeda in "Halwa" consumed.
Justicia breviflora	Acanthaceae	nees	leaf	
Magnifera indica	Anacardiaceae	mango	seed	Seed powder is used to cure
Nyctanthes arbortristis	Nyctangiance	Night jasmine	Whole plant	2 spoonful paste mixed with honey is given for 15 days.
Phyllanthus niruri	Euphorbiaceae	bahupatra	Whole plant	1 tea spoonful paste mixed with water is given for 7-10 days.

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**Figure 13:** Data entry for Menorrhagia

**DATABASE OF MEDICINAL PLANTS FOR CURING THE GYNAECOLOGICAL DISEASES**

Select Disease

**Disease: OVARIAN CYSTS**

SCIENTIFIC NAME OF THE PLANT	FAMILY	COMMON NAME	PLANT PART USED	METHOD OF PREPARATION/ROUTE OF ADMINISTRATION
Cynodon dactylon	Poaceae	Indian doab	Stems, dried	Oral
Urginea altissima	Liliaceae	Tall white squill	bulb	Pulverized bulbs are boiled; pure honey is added and taken orally.

**Figure 14:** Data entry for Ovarian cysts

DISEASE - Windows Internet Explorer

http://localhost:8080/plantbase/PlantServlet?disease=REDUCED+LACTATION

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## DATABASE OF MEDICINAL PLANTS FOR CURING THE GYNAECOLOGICAL DISEASES

Select Disease

**Disease: REDUCED LACTATION**

SCIENTIFIC NAME OF THE PLANT	FAMILY	COMMON NAME	PLANT PART USED	METHOD OF PREPARATION/ROUTE OF ADMINISTRATION
Asparagus racemosus	Asparagaceae	shatavari	Tuberous root	Tuberous root powder is given orally.
Chamaesyce hypericifolia	Euphorbiaceae	Graceful sandmat	Whole plant, fresh	Oral
Euphorbia hirta	Euphorbiaceae	Asthma weed	leaf	Decoction of fresh leaf prepared with milk taken orally twice daily for 2-4 days.
Hemidesmus indicus	Asclepiadaceae	anantmul	root	Paste of fresh root is prepared and taken orally in morning and evening twice daily for 2-4 days.
Ipomoea batatas	Convolvulaceae	Sweet potato	Whole plant, fresh	Oral
Ocimum gratissimum	Lamiaceae	basil	leaves	Consumption of cooked leaves in soup.
Pouteria lucuma	Rutaceae	lucuma	Fruit, fresh	Oral
Sarcostemma clausum	Asclepiadaceae	White twinevine	Leaves, stems, fresh	Oral
Solanum gilo	Solanaceae	Scarlet egg plant	fruit	Fresh fruits eaten.
Xylopia aethiopia	Annonaceae	uda	seed	Soup prepared with ground seeds and other ingredients is taken.

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**Figure 15:** Data entry for Reduced lactation



## 5. CONCLUSION & FUTURE PERSPECTIVE

Medicinal plants constitute a vast, undocumented and overexploited economic resource and they are the principal health care resource for the majority of the people. Although tribal people traditionally use many ethno-medicinal plants to cure many gynaecological disorders, yet no such documentation had been done earlier. Keeping this in view, the present study was initiated with an aim to identify medicinal plants resources and traditional knowledge of people to treat several gynaecological troubles. A synoptic account of plant species, parts used, application and approximate doses in possible cases to cure gynaecological disorders among the people has been prepared in the present study. It has revealed that knowledge of use of different medicinal plants, their parts, doses, application is transferred from one generation to another by word of mouth only. Such knowledge is restricted to few families. People generally treat all kinds of diseases including gynaecological disorders in locality and transfer their knowledge to their next generation. They generally diagnosed diseases based on symptoms told by the patients as well as based on their personal experience in treating human ailments. This study focusses in creating a database on the utilization of plants available with the people they are using the traditional knowledge for the treatment of gynaecological disorders. By this database, we tried to curb an urgent need of systematic documentation of the knowledge of plants which are associated with the treatment of gynaecological diseases. This database will ensure the preservation of knowledge of medicinal plants, which could act as basis of further pharmacological research, bioprospecting and drug discovery. However, knowledge on the use of medicinal plants is enormous but if this is not rapidly researched and recorded, indications is that it will be lost with succeeding generations. In order to preserve traditional medicinal knowledge, it is necessary that inventories of plants with therapeutic value are carried out, and the knowledge related to their use documented in systematic studies. These studies can have other values too for society besides conserving traditional knowledge, for they can help to identify plants with market potential that can generate incomes for local communities. The information provided in the database on the therapeutic uses of plants may provide a great potential for discovering new drugs and promoting awareness among people to use them as remedy in primary health care system. Here, we tried to summarize some medicinal plant species information which may be used to open a new era for development of new drugs for treating various gynaecological disorders. Conclusively, all plants mentioned in this database exhibit the biological activities for curing all the 9 gynaecological diseases taken into account. This database of medicinal plant knowledge will further promote pharmacological research and drug discovery. The database developed shall provide the scientific community with a one stop resource which would be useful in the development of cost effective medicines from plant resources for curing the gynaecological problems.

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