



ETHNOBOTANICALY IMPORTANT MEDICINAL PLANTS OF KAMRUP DISTRICT, ASSAM, INDIA, USED IN FERTILITY TREATMENT

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ABSTRACT

Assam including all the districts is one of the richest sites of plant biodiversity, boasting in thousands of medicinal plants. The present study in due course of time would be helpful to find out potential medicinal plants or chemicals extracted from them that can be of tremendous use in fertility enhancing and in anti fertility. An ethnobotanical survey was conducted in different areas of Kamrup district for a period of 6 months from August 2010 to January 2011. During the field study 50 plant species belonging to 33 families have been recorded which are commonly used by the local people. The decoction of the roots, leaves, bark, fruits, seeds and flowers are the most commonly used. Among the plant parts used, leaf is highly used followed by bark, root, whole plant, fruit, seed, flowers, rhizome, sap and nuts. Some of the plants are found commonly growing in the wild, while others are cultivated plants, however easily available. In the enumeration, data is presented with botanical name, family, vernacular name and uses.

Keywords: Ethnobotanical, Medicinal plants, Fertility enhancing, Antifertility.

INTRODUCTION

Infertility is a common problem, affecting perhaps one in six couple; the majority of whom seek medical treatment¹. A number of studies suggest that male problems represent the commonest single defined cause of infertility². The management options available for the treatment of infertility in males include the use of drugs and a variety of surgical procedures³. The use of plant extracts as fertility enhancer and in the infertility treatment in animals is now in the increase because of the shifting of attention from synthetic drugs to natural plant products⁴. Plants that were once considered of no value are now being investigated, evaluated and developed into drugs, with little or no side effects⁵. Herbs have been used since the beginning of time to aid in many different ailments. Of these ailments, fertility has been enhanced and even corrected by the use of certain herbs⁶. The effect of the extract in increasing the sperm number may be due to the increase in blood testosterone level as shown in study. Testosterone is a male hormone that has significant impact on spermatogenesis.

In the present study the emphasis has been laid on the fact that naturally available plants and their parts can be of great use in acting as fertility and anti fertility agents. In North East India including Assam plants and herbs has been used from long back for enhancing fertility and as contraceptive measures. This present study has been designed to find out the traditionally used medicinal/ ethno botanical plants of Kamrup District of Assam and their effects on the both enhancing fertility and anti fertility.

Assam offers immense scope for ethnobotanical studies since it is inhabited by numerous aboriginal tribes and the region happens to be the part of Indo-Burma Hot-spots of diversity. It possesses rich diversity of flora and a large number of economic and medicinal plants which forms an integral part of the ethnic communities. Kamrup District of Assam comprises two sub- divisions namely, Guwahati and Rangia. Below this level, there are 8 Revenue Circles under Guwahati sub-division and 3 Revenue Circles under Rangia sub-

division. Furthermore, from developmental angle, the district is divided into 15 Development Blocks. Below the block level set-up, there are 162 Gaon Panchayats, each comprising of a number of villages and governed by local-self bodies. The population is comprised of several ethnic groups namely, Bodos, Rabhas, Nepalis, Tea-tribe, Kocharis etc. These people have tremendous knowledge of ethno medicine inherited from their forefathers. People of the area generally communicate in Assamese, Hindi languages.

Kamrup district is extended between 25°46'' and 26°49'' North latitude and between 90°48'' and 91°50'' East longitude and its approximate altitude is 55m above MSL. The temperature ranges from 7° – 38.5° C, average rainfall is 1500 - 2600 mm per year and the relative humidity is 76.6%. The geographical area of the district is 4,34,000 ha. As per 2001 census, total population is 2,522,324; the numbers of people under schedule caste and schedule tribe are 17,043 and 15,701 respectively.

METHODOLOGY

Ethno medicinal information practiced by the different ethnic communities of the district was collected through the field visits in the areas inhabited by different ethnic communities. The survey was conducted in different areas of Kamrup district for a period of 6 months from August 2010 to January 2011. The tribal people including local healers, Bej and village elders were interviewed. The collected plant material used ethno medicinally by the ethnic communities were identified. Preliminary identification of collected plant materials, their local names and information regarding their mode of use were recorded with the help of these traditional medicine practitioners and village elders. The present study reports the use of medicinal plants in the form of infusion or decoction (by soaking in hot water or boiling), extract or juice (by crushing the fresh plant parts with or without water) and paste or powder (by grinding the fresh or dried plant parts).

RESULTS AND DISCUSSION

In the enumeration, plants are arranged with scientific name along with family, local name and plant parts used. The reported plants are used by more than one ethnic group. During the field study 50 plant species belonging to 33 families have been recorded which are commonly used by the

local people. This primary information is important in view that it may lead to serious pharmacological research and can provide great value in selecting plant material for drug discovery. Among the plant parts used, Root is highly used followed by leaves, whole plant, seeds, fruit, bark, flowers, tender aerial parts, fresh twig, tuber and carpel.

Table 1: Plants showing Fertility effects

Botanical name	Family	Local Name	Part(s) used	Ethnomedicinal uses
<i>Cyperus rotundus</i>	Cyperaceae	Keya bon	Whole plant	Estrogenic
<i>Datura metel</i>	Solanaceae	Kola-dhatura	Leaves, seed	Dysmenorrhea
<i>Dolichos biflorus</i>	Fabaceae	Kulthi mah	Seed	Dysmenorrhea
<i>Hyptianthera strica</i>	Rubiaceae	Mirherai	Leaves	Ease labour
<i>Jatropha curcus</i>	Euphorbiaceae	Bhotera	Leaves, seed	Amenorrhea, oligomenorrhea
<i>Nelumbo nucifera</i>	Nymphaeaceae	Lotus/ Podum	Carpel	Prevent Miscarriage
<i>Swertia chirayita</i>	Gentianaceae	Chiretta	Root	Prevent Abortion
<i>Bombax ceiba</i>	Bombaceae	Semalo	Bark, Root	Gynaecological disorder
<i>Anthocephalus kadamba</i>	Rubiaceae	Kadam	Leaf, Flower	Labour pain
<i>Terminalia arjuna</i>	Combrataceae	Arjun	Bark, Fruit	Erectile dysfunction, Leucorrhea
<i>Lawsonia inermis</i>	Lythraceae	Jetuka	Leaves, root, bark	Infertility
<i>Ageratum conyzoides</i>	Asteraceae	Sagun tuloshi	Leaves, flower, seed	Prostrate problem
<i>Andrographis paniculata</i>	Acanthaceae	Kalpatita, Kalmegh	Whole plant	sexual disorder
<i>Aloe barbadensis</i>	Liliaceae	Chalkuwari	Leaves	Parturient, irregular menstruation
<i>Mangifera indica</i>	Anacardiaceae	Aam	Fruit	Impotency
<i>Hemidesmus indica</i>	Asclepiadaceae	Anantamul/ Sarsaparilla	Stem, Root	Leucorrhoea
<i>Emydra fluctuans</i>	Asteraceae	Helochy	Whole plant	Impotency/Infertility
<i>Semecarpus anacardium</i>	Anacardiaceae	Velaguti	Fruit	Inducing fertility
<i>Terminalia bellirica</i>	Combrataceae	Bhomora	Fruit, Seed	Impotency
<i>Costus speciosus</i>	Zinziberaceae	Jamla khuti	Tuber	Leucorrhoea, Impotency
<i>Desmodium gangeticum</i>	Fabaceae	Shalaparni	Whole plant	Infertility
<i>Leea macrophylla</i>	Vitaceae	Doolmudra	Leaf, Root	Impotency, Infertility
<i>Cardiospermum helicacabum</i>	Sapindaceae	Jaal koro	Leaf, Root	Impotency
<i>Vitex negundo</i>	Verbenaceae	Posotia	Whole plant	Placentitis
<i>Portulaca oleracea</i>	Portulacaceae	Pusley	Root	Enhancing fertility
<i>Centella asiatica</i>	Apiaceae	Bor-manimuni	Whole plant	Pelvic inflammatory disease
<i>Citrus aurantifolia</i>	Rutaceae	Kaji nemu	Fruit	Male, female infertility
<i>Dychoriste perrotteti</i>	Acanthaceae	Buohoh	Leaves	Female infertility
<i>Benincasa hispida</i>	Cucurbitaceae	Komora	Seed, fruit	Induced fertility
<i>Colocasia esculanta</i>	Araceae	Kola kochu	Whole plant	Induced fertility
<i>Crotolaria juncea</i>	Fabaceae	Shan	Leaves	Induced fertility
<i>Saraca asoca</i>	Caesalpinaceae	Ashok	Flower, bark	Fertility enhancement
<i>Musa paradisiaca</i>	Musaceae	Banana	Root	Inducing fertility
<i>Pongamia pinnata</i>	Fabaceae	Karos	Seed, root, Bark, leaf	Increase fertility, potency
<i>Solanum Indicum</i>	Solanaceae	Gos alu	Fruit, root	Induce fertility
<i>Ipomoea Aquatica</i>	Convolvulaceae	Kalmou	Fresh twig	Treatment of impotency, infertility
<i>Cynodon Dactylon</i>	Poaceae	Dubori- bon	Whole plant	Infertility treatment
<i>Clitoria ternatea</i>	Fabaceae	Aparajita	Leaf, root, seed	Enhancing fertility
<i>Argyrea speciosa</i>	Convolvulaceae	Bichtarak	Flower, Root	Aphrodisiac, induce Fertility
<i>Putranjiva Roxburgii</i>	Euphorbiaceae	Putrajiv	Seed, Leaves	Induction of fertility
<i>Cleome gynandra</i>	Capparaceae	Bhutmula, Gandhali bon	Leaves	Induction of fertility
<i>Sterospermum Suaveolens</i>	Bignoniaceae	Patla	Leaves	Increase fertility, potency
<i>Amaranthus tricolor</i>	Amaranthaceae	Morisha hak	Whole plant	Induce fertility
<i>Amaranthus spinosus</i>	Amaranthaceae	Kutura hak	Tender aerial part, root	Increase fertility, potency
<i>Asparagus racemosus</i>	Liliaceae	Satamul	Root	Facilitate delivery, Check abortion
<i>Mesua ferrea</i>	Clusiaceae	Nahor	Flower, seed	Impotency
<i>Nerium indicum</i>	Apocynaceae	Karabi	Root	Abortive
<i>Symplocos paniculata</i>	Symplocaceae	Bhomloti	Leaves, bark	Check threatened abortion
<i>Sida rhombifolia</i>	Malvaceae	Boriala	Whole plant	Enhance sexual strength
<i>Wedelia chinensis</i>	Asteraceae	Maha-bhringaraj	Leaves	Menorrhagea

Among the plant parts used, Root and leaves are highly used followed by whole plant, seeds, fruit, bark, flowers, tender aerial parts, fresh twig, tuber and carpel. It is found that root and leaves are used in case of 15 plant species, whole plant is

10, seed is 9, fruit is 7, bark is 6, flower is 5, tender aerial part, fresh twig, tuber and carpel are used in single cases each.

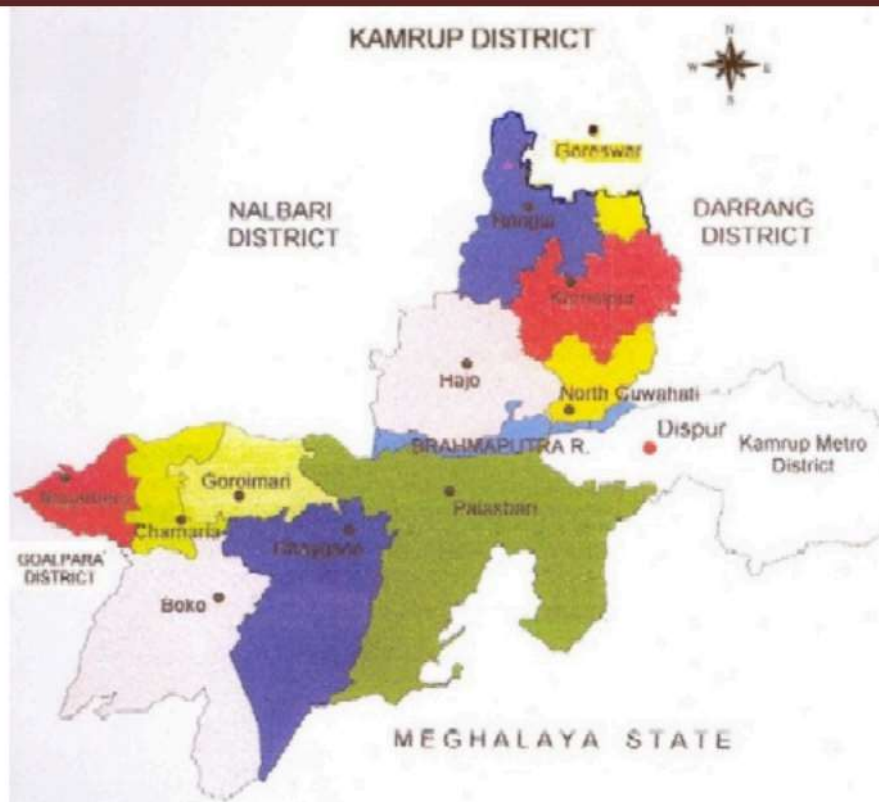


Figure 1: Boundary map of Kamrup District

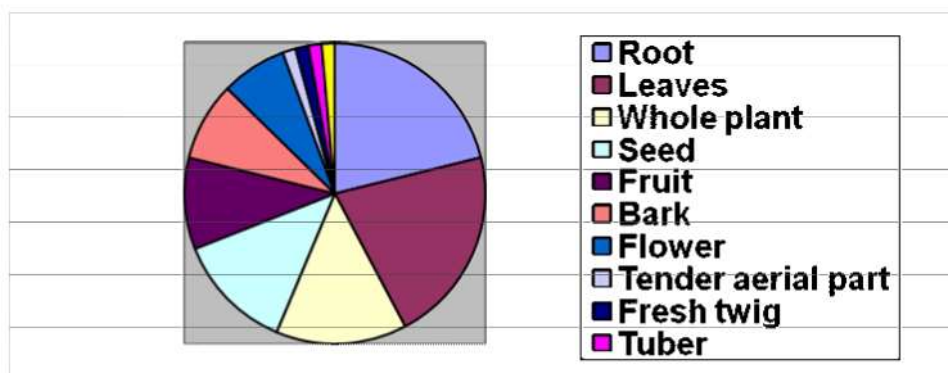


Figure 2: Pie diagram -showing the rate of plant parts used

Root: 15 Flower: 5 Leaves: 15 Tender aerial part: 1 Whole plant: 10 Fresh twig: 1 Seed: 9 Tuber: 1 Fruit: 7 Carpel: 1 Bark: 6

It is observed that popularity of herbal medicines is gradually increasing among the people of different areas of Kamrup district. Various pharmaceutical investigations of the plant species used by the tribal people of the district will bring about some new information which has immense scientific values.

CONCLUSION

The North Eastern parts of the India are very rich in biodiversity. Assam including all the districts is one of the richest sites of plant biodiversity, boasting in thousands of medicinal plants. But unfortunately it has been found that

little research has been done on the ethno botanically important plants and their use. The present study in due course of time would be helpful to find out potential medicinal plants or chemicals extracted from them that can be of tremendous use in fertility enhancing and in antifertility. This present study has been aimed at to close the gap in research of medicinal plants and their utilization in reproductive biology.

The ethnomedical knowledge of the tribals may provide a strategy for discovery of clinically useful compounds from plant sources. Drugs and formulations prepared from Plants are mostly considered to be less toxic and free from side

effects than synthetic ones. The search for alternate remedies is going on in full swing and will continue all over the world as the problem poses a threat to the whole world creating a challenge for the researchers.

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