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An overview of Ethnomedicinal plants of Family Rubiaceae from Sabarmati River of Gujarat state, India

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Abstract

An overview of ethnomedicinal values of plant species in family Rubiaceae, which are grown in the area of Sabarmati river. Plant exploration was conducted to determine plant species of family Rubiaceae. Taxonomic position of these plant species is described in various available Floras. Plant species of family Rubiaceae from Sabarmati riverbed-riverside area have been listed systematically which counts 13 species of 12 genera, 09 wild plant species and 05 cultivated plant species. Most of the plant species and their plant parts have ethnomedicinal values and its utilize in different kind of diseases and uses as different form.

Key-Words: Ethnomedicinal, Rubiaceae, Sabarmati river

Introduction

Rubiaceae family is dicot angiosperm and having 340 Genera and 4000 species found in tropical and sub tropical. It includes herbs, shrub, tree and rarely twiners. Life span is perennials and annuals. This family easily recognized by their interpetiolar stipules [4] Ethnomedicinal plants - drug yielding plants have been used since ancient times for the treatment of human ailments. Indigenous people throughout the world possess knowledge of their surrounding flora and fauna. Use of various parts of herbs, shrubs and trees as a medicine is known to man since time immemorial. The ethnomedicinal traditions play reflective and prominent role in human and environment interaction [7]. Consequently it becomes the store house of knowledge of many useful as well as harmful plants accumulated and enriched through generations and passed on from one to another generation without any type of written record. The present work is an attempt to identify the important plant species with their local names, part used and type of use. Earlier many workers are working either at universities or at research laboratories [1][3][8][9][10][12][13][15].

Study area

The geographical situation of the Sabarmati river is between 22° 30' to 24° 30' North latitude and 72° 30' to 73° 30' East longitude. It originates from Arvalli hills, near Vekaria in Rajasthan State and enters in the Gujarat state at the boundary of the Sabarkantha district. It passing through across the Northern to central part of the Gujarat state. Sabarmati river is one of the longest river in the state and its length is about 418 km. It has total 5475 sq.km catchments area. [6]

Material and Methods

The study on angiosperms of family Rubiaceae from the Sabarmati river of Gujarat, India is based on the results obtained from extensive studies of the vegetation of an area. Field survey was carried out for collection of plants. Identification of plant species during field work was done by compiling different available flora [2][4][11][12][14] and authenticated by experts from University department and research institutes. This piece of work is survey based. Surveys were made by often visit to study sites during research work and post doctor work. Plants were tabulated as Scientific name, Vernacular name and Habit represent in description. A large number of rural persons were interviewed to gather the ethnomedicinal information. The data presented here are based on personal interviews with informants like medicine- man, local healers, farmers, village headmen and old experienced men & women. The information was recorded on a questionnaire in the field note book [5]

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Results and Discussion

1. *Adina cordifolia* (Roxb.) Bth. Hk. f. ex Brandis, (Haldarvo)

Deciduous trees, 8-20m tall, with gray or light-black bark. Leaves across, broadly ovate to sub-orbicular, hairy, petiolate, entire. Flowers yellow, in globose, axillary heads. Seeds, oblong, brown, minutely hairy, winged.

USES :

- Bark and leaves are used for cholera, cold cough, fever, headache and urine complaints.
- Juice of fresh stem bark taken in rheumatism,
- Paste of bark used in eczema, Scabies, or bacterial infections on the skin
- Juice of leaf is used to treat boils and conjunctivitis.

2. *Borreria articularis* (L.f.) F.N. Will. (Ganthiyu)

Annual, procumbent or suberect herbs with hispid, hairs in younger parts. Leaves elliptic or elliptic-lanceolate, pubescent. Capsule oblong, Seeds ellipsoid-oblong.

USES :

- Root part is used for curing stomach pain and regulates excessive discharges during menses.
- Seeds of the plant having wormicide property and used in treatment in toothache.

3. *Borreria stricta* (L.f.) Schum. (Ganthiyu)

A tall annual herbs. Leaves subsessile, linear to linear-lanceolate, minutely hairy. Capsule oblong, pubescent in upper half part. Seeds oblong, reddish-brown.

USES :

- Decoction of root is prescribed as emetic in poisoning cases.
- Juice of leaf is used to cure pain of ear.
- Flower-bud paste is used as ointment on cuts and wounds.

4. *Canthium parviflorum* Lam. (Kirni)

Small shrubs; leaves petiolate, entire, ovate, obovate or suborbicular, glabrous. flowers many, in cymes or sometimes fascicled ; fruit drupes oblong-ellipsoid.

USES :

- Leaves and roots are sweet, febrifuge, diuretic, constipating, anthelminthic, and astringent.
- Its used in cough, diarrhea, fever, leucorrhoea, intestinal worms.
- Leaves decoction is used for wound healing in animals.
- Pasre of leaf is externally applied twice a day to treat scabies and the ring worm infection .
- It is used for the treatment of diabetes.

5. *Ixora coccinia* L

Tall shrubs; leaves petiolate, entire, elliptic or sometimes obovate, oblong, glabrous. flowers red , pink or scarlet, yellow , many, in terminal panical cymes ; fruit berries globose smooth.

USES :

- Roots and flowers are used as curative for dysentery and ulcer.
- Colourful flowers used as colour and smell natural therapy treatment.

6. *Hamelia patens* Jacq.

Tall shrubs; leaves petiolate, entire, elliptic or sometimes obovate, oblong, glabrous. flowers red , pink or scarlet, yellow , many, in terminal panical cymes ; fruit berries globose smooth.

USES :

- Leaves, stems and flowers , boiled in water, cool it and applied to the affected skin area.
- It is used for skin problems including, sores, rashes, wounds, burns, itching, cuts.
- Leaves are chewd to lower body temperature and its also prevent sun/heat stroke.
- Leaves externally for headaches and decoction is taken for rheumatism.
- Leaf extracts showed analgesic, diuretic, and externally anti-inflammatory activity.
- It has antibacterial and antifungal properties .

7. *Gardenia gummifera* Linn.f (Dikamali)

Deciduous shrub, with smooth, yellowish to blackish-brown bark. Leaves sessile. lowers are non odorous a Calyx 1 Cm. Long Corolla at first, white and later changes to yellow. Fruits broad, ovoid Dikamali is the gum resin obtained from leaf bud.

USES :

- It is used in the form of paste and powder to treat lack of taste, wound, indigestion, constipation, abdominal distentions, colic pain, roundworm, cough, respiratory diseases, fever, and skin diseases.
- Paste of tubers applied on abdomen of women to make child birth safe and easy.
- It is anthelmintic, antispasmodic, carminative, diaphoretic, expectorant.
- It induced sleep, Antiepileptic, , Antioxidant, and Antihyperlipidemic.
- It is useful in dyspepsia, flatulence for cleaning foul ulcers and wounds,
- It is keep off flies from wounds in veterinary practice .
- This plant is a remedy for indigestion in children.

- Bark juice is given orally to snake bite victims as an antidote and paste is applied externally.

8. *Hymenodictyon excelsum* (Roxb.) Wall. (Bhammar chal)

9-15 m tall, deciduous trees, with smooth, ash-coloured bark. Leaves ovate-elliptic or obovate-oblong, membranous, pubescent. Flowers pale-greenish-white, fascicled, fascicles forming 8-15 cm long, terminal and axillary panicles. Fruit ellipsoidal, brown.

USES :

- Powder of the root is given with cow's milk in bodily inflammation.
- Bark is used as powder to kill tapeworms and to cure dysentery.

9. *Anthocephalus indicus* A. Rich. (Kadamb)

Soft wooded, unarmed 8-15m tall, deciduous trees with bark gray and smooth. Leaves ovate, elliptic-oblong, obovate or nearly glabrous. Flowers white, creamy-yellow in axillary and terminal heads. Capsules glabrous, distinctly ribbed. Seed small, brown nearly smooth, winged.

USES :

- Bark used in treatment of hoarseness of throat, mixing bark in cold water, honey and cumin .
- Herbal bath makes the skin soft and makes free from all infections.
- Bark used in treatment of eye diseases.
- Juice of fruit is given to children for treatment of gastric irritability.
- Leaves decoction is good for wounds and ulcers..

10. *Morinda tomentosa* Heyne. ex Roth, (Aal)

Unarmed tall trees with blackish-brown, rough bark. Leaves entire, petiolate, acute, elliptic, elliptic-oblong or obovate-oblong ; flowers white, regular, pedicellate in fleshy, globose heads ; fruits drupes, bright-green coloured ; seeds oblong or obovate, pale or dark-brown, rough.

USES :

- Juice of Leaves used for gout disease, and locally applied to wounds .
- Fruit is useful in asthma and dysentery,
- Fried fruits are used to control the raised blood sugar level.
- Fruit juice is useful in diabetes. Decoction is useful as emmenagogue.

11. *Oldenlandia corymbosa* L. (Parpat)

Annual, erect or diffuse, 10-30cm tall, glabrous herbs. Leaves 1-2cm long, narrowly linear, glabrous, acute, lanceolate. Flowers white or creamy-yellow in axillary cymes. Capsule globose, smooth, glabrous. Seeds minute, angular, dark-brown or black.

USES :

- Plant decoction is given in fever with gastric irritation and nervous depression.
- Plant is given in jaundice, hepatic diseases and as anthelmintic.
- Paste of Leaves in burning sensation of soles and palms.

12. *Rubia cordifolia* L. (Majith)

Climbing herbs, with red rhizomatous base and roots; stems several to many from base, often much branched, quadrangular, glabrous to puberulent, with ribs rounded to thinly winged .Leaves in whorls of 4 or greenish, lanceolate, oblong-lanceolate, ovate, base rounded, truncate apex obtuse . Inflorescences , paniculate, with terminal and axillary, Corolla pale yellow or greenish yellow

USES :

- It has properties like antidysentric, anthelmintic, astringent, carminative, expectorant.
- It is used in cough, hepatic obstructions, indigestion, jaundice, ulcers, fracture, obstructions in urinary passage.
- Plant is used in diabetic treatment.
- Decoction of roots is given to relieve cough, cold and respiratory problems especially in infants.
- The oil extract of whole plant is used to cure eczema.

13. *Xeromphis spinosa* (Thunb.) Keay (Mindhal)

Armed, deciduous 1-3.5m tall shrubs with dark-brown or black, rough bark. Leaves fascicled, at ends of branches, elliptic or obovate, subcoriaceous, glabrous. Flowers creamy-white or pale-yellow, fragrant. Fruits ovoid or nearly globose, woody, smooth or faintly longitudinally ribbed. Seeds numerous, compressed, angular, glabrous, smooth.

USES :

- Fruits are emetic, purgative, diaphoretic, antispasmodic, carminative and antipyretic.
- It is used to treat for bronchitis, asthma, pain of muscle, inflammations, leprosy, boils and eruptions.
- Its applied externally in rheumatism.
- The pulp is believed to have anthelmintic properties.
- The powdered pulp is astringent and emetic.
- Bark is astringent, sedative, and used in rheumatism; relive pain of bruises and bone-aches during fever.
- Root bark is insecticidal.
- The root is also used as a remedy against bleeding, inflammations and pain .

Table 1:
[T-Tree , S-Shrub , H-Herb , Cl-Climber , W- wild , C- cultivated,]

No	BOTANICAL NAME	LOCAL NAME (In Gujarati)	HABIT	CULTIVATED or WILD
01	<i>Adina cordifolia (Roxb.) Bth. & Hk.f.</i>	Haldarvo	T	C
02	<i>Anthocephalus indicus A.Rich</i>	Kadamb	T	C
03	<i>Borreria articularis (L.f.) F.N.Will.</i>	Ganthiyu	H	W
04	<i>Borreria stricta (L.f.) Schum.</i>	Ganthiyu	H	W
05	<i>Canthium parviflorum Lam.</i>	Kirni	S	W
06	<i>Gardenia gummifera Roth.</i>	Dikamali	T	C
07	<i>Hamelia patens Jacq.</i>	Hamelia	S	C
08	<i>Hymenodictyon excelsum (Roxb.) Wall.</i>	Bhamarchhal	T	C
09	<i>Ixora coccinia L</i>	rati nevri	S	C
10	<i>Morinda tomentosa Heyne</i>	Aal, Aaledi	T	C
11	<i>Oldenlandia corymbosa L.</i>	Parpat	H	W
12	<i>Rubia cordifolia L.</i>	Majith	Cl	C
13	<i>Xeromphis spinosa (Thunb.) Keay</i>	Mindhali	T	C

STATISTICAL ANALYSIS OF FAMILY

Family: Rubiaceae

Herbs	Shrubs	Trees	Twiners
03	03	06	01

ANALYSIS OF HABIT: Family: Rubiaceae

Genera	12
Species	13

ANALYSIS OF CULTIVATED / WILD PLANTS Family: Rubiaceae

WILD PLANTS	CULTIVATED PLANTS
04	09

Conclusion

The analysis of the plant species in the area gives the result that the total Angiosperm flora including naturalized and indigenous plants comprises of about 13 species belong to 12 genera of the family. Herbs 03 species, shrub 03 species, tree 06 species, twiners 01 species. There are 09 cultivated plant species and 04 wild plant species.

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