Department of Botany,

St Xavier's College (Autonomous), Mumbai

CERTIFICATE

This is to certify that the project on '*An ethnobotanical evaluation of Ashta and Bendgaon villages in Palghar District, Maharashtra for their herbal drugs*' has been successfully completed by **Mr. Sanjay Sasidharan** of Botany M.Sc. Part II, UIDNo 188317 during the academic year 2019-20

Project Guide (Alok Gude)

Head, Dept of Botany

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MUMBAI - 400 001.

An ethnobotanical evaluation of Ashta and Bendgaon villages in Palghar district, Maharashtra for their herbal drugs.

By

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(Under the guidance of Mr. Alok Gude and Co-guidance of Mr. Saif Khan)

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This is to certify that the project titled 'An ethnobotanical evaluation of Ashta and Bendgaon villages in Palghar district, Maharashtra for their herbal drugs.' undertaken at the St. Xavier's College – Autonomous, Mumbai by Sanjay Sasidharan. In partial fulfilment of the MSc Part-II Botany degree (Semester IV) examination has not been submitted for any other examination and does not form part of any other course undergone by the candidate.

Prof. Alok Gude
Project Guide and In-Charge HOD

External Examiner

College Seal

DECLARATION

I, Sanjay Sasidharan (188317), hereby declare that this project report entitled: 'An ethnobotanical evaluation of Ashta and Bendgaon villages in Palghar district, Maharashtra for their herbal drugs' which is being submitted in fulfilment of the Masters of Science in Botany Examination conducted by St. Xavier's College – Autonomous under Mumbai University is the result of the work carried out by me under the supervision of Prof. Alok Gude of St. Xavier's College,(Autonomous) Mumbai. This project has not previously formed the basis for the award of any degree, diploma, or certificate of this college or of any other college or university.

Sanjay Sasidharan

(188317).

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Sanjay Sasidharan.

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INTRODUCTION

Our country is having a rich vegetation with a wide variety of plants, because of the extreme variations in geographical and climatic conditions prevailing. Several kind of plants and its parts have been used since ancient times for the treatment of various ailments. Mainly, in between tribal communities in some villages of Palghar district meet their healthcare needs by using minor forest products and preparations based on traditional knowledge. And also they still depend on medicinal plants. Principally most of them have a basic understanding of medicinal plants which are used for first aid remedies, to treat cough, cold, fever, headache, poisonous bites and some simple ailments. This project was initiated with an aim to identify and documenting herbal drugs which are practicing among Ashta and Bendgaon villages in Palghar district. Also quantitatively document their indigenous knowledge on the utilization of medicinal plants, particularly most common ethnomedicinal plants. Documentation of wild edible plants from Palghar District through discussion with rural people as well as continuously field visits. To document medicinal value of documented wild edible plants through discussion with local medicine man and Vaidias.

The use of plant species as traditional medicines provides a real substitute in healthcare services for rural communities of the developing nations. It has been estimated that around 80% of the population in developing countries depends on traditional medicines for primary health care system. These traditional medicines are costeffective, safe and affordable. Globally, approximately 85% of the traditional medicines used in primary healthcare are derived from plants species. Therefore, medicinal plants are the indigenous heritage of global importance. Such plants have been used by the indigenous people for treatment of different ailments since long. It will explore our indigenous knowledge about the medicinal important plants. Study Area: Ashta and

Bendgaon villages, Palghar. The project investigations were carried out from these villages, tribal talukas of Palghar district. The climate here is humid and cooled. The people here use the medicinal plants according to their knowledge and belief healing properties for various aliments, role in religious and social ceremonies which are manifested in their folk behaviour. Thus indigenous community directly or indirectly helps in plant exploration for herbal drugs for treatment. The people developed their own traditional ways of diagnosis and treating various diseases by trial and error basis; which fulfils their basic need from the nearby forest.

As the field of ethnobotany has matured and been embraced by professional anthropologists. Mere lists of economically useful plants have been shown to be inadequate in explaining the human relationship to their botanical environment. The social, functional and ideological context be considered. Ethnobotany is a multidisciplinary field encompassing or integrated with such diverse disciplines as ethnoecology, ethnomedicine, cognitive ethnobotany, traditional agricultural practices.

Aim

Aim: To prepare an ethnobotanical evaluation of Ashta and Bendgaon villages in Palghar district, Maharashtra for their herbal drugs.

Materials and methods

Materials for the field work

1. Notebook
2. Camera
3. Lens
4. Laptop
5. Other stationaries

Method

1. Selection of site
2. Survey of Literature
3. Field work
4. Personal visits
5. Personal interviews
6. Preparation of data

Methodology

(a) Selection of site: With the help of my seniors and guides I chose a comfortable village to work with.

(b) Survey of Literature: By reading the papers regarding ethnobotany, discussions with the experts and consultations for the basic knowledge about the project.

(c) Field work: All the information are about to collect from the local informants in the particular villages only. The medicinal plants were collected from different areas of the villages. The information about uses of plants was collected from the tribals. At the same time some of the plant species were collected. Plant species were identified with the help of floras and keys.

(d) Personal visits: To make the relationships bond with the vaidias and locals by spending some time with them. As they are very inferior to the people out from their village, I had to keep contact with them in person. Well, that helped alot in the field work.

(e) Personal interviews: Questionnaires were prepared for collecting information. The interviews of vaidya and people were taken. The informations were collected. The informative data will be based on semi-structured interviews, group discussions, questionnaire and field visits.

(f) Preparation of data for the documentation using computer.

Note:

As it is a 90% field project, there was no need of instruments as laboratarical projects. All I needed were a laptop, research papers, books, journals, camera and other stationery. I started with survey of literature by reading the papers regarding ethnobotany, discussions with the experts. The data occurred through discussions and interviews with experienced persons and traditional healers. The data on wild edible plants were collected using preparation of questionnaire in local language and group discussions. Some voucher specimens were collected during walk with informants. The collected plants were pictured and identified by using standard floras. The field study was carried out over a period of 6 months in the villages. The ethnomedicinal information was collected through interviews among the locals and vaidias. Then compile all the data on traditional treatments against various ailments, including method of preparation, plant part(s) utilization and application. And the documentation was done by using the computer.

Results

The colloquial language was definitely a barrier for me. But with the help of some locals, I did cope that. It was entirely unfortunate that I could not get to see some seasonal medicinal plants, due to the pandemic COVID disease as it chunk the trips. And travelling to the designations were quite unacceptable as the villages were so interior. Also with my co-guide Mr. Saif Khan and Mr. Alok Gude, I could manage to prepare the questionnaire for the villagers.

Table 1.
Sample of the questionnaire:

Name	Vittal Dodke
Occupation	Farmer, Vaithya
Gender	Male
Age	44
Qualification	5th Standard
Practice of plant	'*Jungli jhaad'* -Wild Plant
Name of the plant (Common name)	*'Rui'*
Botanical name	*Calotropis gigantea* (L.) Dryand
Family	Asclepediaceae
Habit	Shrub
Parts used	Flower bud, leaves, root
Source of collection	Wild
Disease treated	Menstrual problem, Chronic piles and Malaria
Formulation	Flower bud crushed, air dried for day and taken early morning with lukewarm water for menstrual problem. Leaves soak in water for chronic piles. Decoction of roots for malaria.

Table 2.
Data of the plant list;

1.

Botanical name	*Sphaeranthus indicus* (L.)
Common name	Gorakmundi
Family	Asteraceae
Parts of plant used	Whole plant, root
Disease(s) treated	Epilepsy, migrane, jaundice
Formulation	Whole plant docoction along with jaggery is given twice day to jaundice patient. Root extract for epilepsy, migrane.
Source of collection	Wild

2.

Botanical name	*Tridax procumbens* (L.)
Common name	Ghavpala
Family	Astereaceae
Parts of plant used	Leaves,root
Disease treated	Wounds and inflammation
Formulation	The leaves are crushed and paste is made and applied over wounded area immediate reliefs obtained. Root powder boiled and mixed with aloe pulp for inflammation.
Source of collection	Wild

3.

Botanical name	*Trema prientalis* (L.)
Common name	Ghola
Family	Cannabaceae
Parts of plant used	Leaves and bark
Disease treated	Anemia, urinary infection
Formulation	Leaf extract with jaggery to cure anemia. Decoction of bark taken twice day for urinary infection.
Source of collection	Wild

4.

Botanical name	*Pogostemon bengalensis* (Burn.f.) Kuntze
Common name	Kumbai
Family	Lamiaceae
Parts of plant used	Root
Disease treated	Mouth ulcer
Formulation	Roots are crushed and paste is prepared, these paste is applied externally to cure mouth ulcer.
Source of collection	Wild

5.

Botanical name	*Gossypium hirsutum* (L.)
Common name	Kapus
Family	Malvaceae
Parts of plant used	Flowers, leaves
Disease treated	Bleeding disorders
Formulation	Cotton flower extract along with piper longa leaf extract in equal ratio is boiled and given in milk.
Source of collection	Wild

6.

Botanical name	*Urena lobata* (L.)
Common name	Gokaru
Family	Malvaceae
Parts of plant used	Roots
Disease treated	Gaatric pain and dysentery
Formulation	Decoctions of roots along with honey given to patients
Source of collection	Wild

7.

Botanical name	Syzygium cumini (L.)
Common name	Jambhala
Family	Myrtaceae
Parts of plant used	Leaf, fruit, bark
Disease treated	Diabetes, kidney stone
Formulation	Juice of fruit is excellent for diabetes and heart problems. Bark and leaf extract is taken for kidney stone.
Source of collection	Wild

8.

Botanical name	*Duranta repens* (L.)
Common name	Fulri
Family	Verbenaceae
Parts of plant used	Leaves and flowers
Disease treated	Scabies in humans and tick fever in animals
Formulation	Flower powder is made roasted and applied over affected area of scabies in humans while the leaves are crushed along with leaves are crushed along with leaves of neem, umber and the paste is fed to animals.
Source of collection	Wild

9.

Botanical name	*Ziziphus mauritiana* Lam.
Common name	Bora
Family	Rhamnaceae
Parts of plant used	Leaves and fruits
Disease treated	Indigestion, acidity-humans Lactation increase-animals
Formulation	Leaf crushed and dried 2 days after that taken with honey - indigestion and acidity. Fruit powder mixed with fodder - lactation increase.
Source of collection	Wild

10.

Botanical name	*Eucalyptus globulus* Labill
Common name	Nilgiri
Family	Myrtaceae
Parts of plant used	Leaves and Stem bark
Disease treated	Respiratory problem, tooth and gum problem
Formulation	Decoction of leaves taken early morning with honey for respiratory problem. Steam bark extract given for gum and tooth problem.
Source of collection	Wild

11.

Botanical name	*Tinospora cordifolia* (Wild.) Miers
Common name	Gulvel
Family	Menispermeceae
Parts of plant used	Roots
Disease treated	Fever and wounds
Formulation	Root paste applied over wound and root extract is given to patient of fever.
Source of collection	Wild

12.

Botanical name	*Tectona grandis* L.f.
Common name	Sagwan
Family	Lamiaceae
Parts of plant used	Bark, leaf
Disease treated	Jaundice, snakebite
Formulation	Bark dried and powdered boiled in water little and given to patient along with jaggery.
Source of collection	Wild

13.

Botanical name	*Tamari indus indica* Gaertn.
Common name	Chinch
Family	Fabaceae
Parts of plant used	Leaves
Disease treated	Body pain
Formulation	Oil is obtained from leaves and mixed with mustard oil boiled little and applied over body to get rid of body oain instantly.
Source of collection	Wild and cultivated

14.

Botanical name	*Pomgamia pinnata* (L.) Pierre
Common name	Karanj
Family	Fabaceae
Parts of plant used	Leaves
Disease treated	Vomiting
Formulation	Seed extract is used as blood purufier. Flower powder is taken with lukewarm water to stop vomoting.
Source of collection	Wild and cultivated

15.

Botanical name	*Abutilon indicum* (L.) Sweet
Common name	Peti
Family	Malvaceae
Parts of plant used	Leaves and roots
Disease treated	Dysentery, given to cattle for good health, lice problems.
Formulation	Fresh leaves crushed and taken with lukewarm water and dysentery. To get rid of lices, root juice is applied overnight and kept.
Source of collection	Wild

16.

Botanical name	*Psidium guajava* (L.)
Common name	Peru
Family	Myrtaceae
Parts of plant used	Leaf and fruits
Disease treated	Diarrhoea and intestinal worms
Formulation	Leaves boiled in black tea given to control diarrhoea. Ripe fruits are taken with sugar for intestinal worms.
Source of collection	Wild and cultivated

17.

Botanical name	*Moringa oleifera* Lam.
Common name	Shevaga
Family	Moringaceae
Parts of plant used	Leaves and fruits
Disease treated	Blood purifier, boost imunity, hyperacidity
Formulation	Leaves powder to be taken at night. Also used as food both leaf and pod as vegetable
Source of collection	Wild and cultivated

18..

Botanical name	*Dendrocalamus strictus* (Roxb.) Nees
Common name	Bamboo
Family	Poaceae
Parts of plant used	Young shoot
Disease treated	Respiratory tract
Formulation	Juice from young shoot of bamboo given to respiratory problem. Also used for furnishing.
Source of collection	Wild

19.

Botanical name	*Aloe barbadensis* Mill.
Common name	Korphad
Family	Xanthorrhoeaceae
Parts of plant used	Leaf
Disease treated	Skin disease, inflammation
Formulation	Leaf pulp extract along with water taken early morning
Source of collection	Cultivated

20.

Botanical name	*Ficus carica* (L.)
Common name	Anjir
Family	Moraceace
Parts of plant used	Fruits and leaves
Disease treated	Anemia and eye problem
Formulation	Fresh fruits juice should be given daily early morning to anemic patient. Leaves crushed and paste is made and applied over eye area for eye problems.
Source of collection	Wild

21.

Botanical name	*Ficus racemosa* (L.)
Common name	Umber
Family	Moraceae
Parts of plant used	Latex, root, fruit
Disease treated	Jaundice, snakebite, stomach ache
Formulation	Root extract with jaggery given for jaundice. Latex applied over infected area on snake bite. Fruit is edible and eaten for stomach ache.
Source of collection	Wild

22.

Botanical name	*Ficus hipida* (L.f)
Common name	Laalumbar
Family	Moraceae
Parts of plant used	Fruit, bark
Disease treated	Snake bite, respiratory problem
Formulation	The unripe fruits are eaten to cure cough and throat disorders for 2-3 days. Bark is boiled in water and the filtrate is given to promote fertility in woman. The filterate is given daily till conception. Bark powder is applied on snake bites.
Source of collection	Wild and cultivated

23.

Botanical name	*Grewia asiatica* (L.)
Common name	Falap
Family	Malvaceae
Parts of plant used	Leaves, flowers
Disease treated	Indigestion, gastric troubles
Formulation	Flower and leaf juice mixed in lime juice given to the patient.
Source of collection	Wild

24.

Botanical name	*Ocimum tenuiflorum* (L.)
Common name	Tulas
Family	Lamiaceae
Parts of plant used	Leaf, seed, root
Disease treated	Diabetis, fever, cough and cold, dental caries and migrane
Formulation	Leaf decoction mixed with ginger, garlic and salt boiled thoroughly and given for fever, cough and cold. Seeds are soaked overnight and drank early morning fpor diabetis. Roots are crushed into paste and chewed for dental caries.
Source of collection	Wild and cultivated

25.

Botanical name	*Terminalia crenulata* Roth.
Common name	Chuchki
Family	Combretaceae
Parts of plant used	Stem bark
Disease treated	Fever
Formulation	Stem bark extract boiled is given to patient suffering from fever.
Source of collection	Wild

26.

Botanical name	*Euphorbia hirta* (L.)
Common name	Ghevni
Family	Euphorbiaceae
Parts of plant used	Whole plant
Disease treated	Chronic cough
Formulation	Whole plant decoction and honey in cowmilk is given to patient.
Source of collection	Wild

27.

Botanical name	*Acacia nilotica* (L.) Delile
Common name	Babhul
Family	Fabaceae
Parts of plant used	Bark, leaves
Disease treated	Skin diseases, bone fracture and dog bite
Formulation	Bark is crushed and drank early morning for skin problems. Leaves paste applied on bone fracture and decoction of leaves with buttermilk is given for dog bite.
Source of collection	Wild

28.

Botanical name	*Crotalaria verrucosa* (L.)
Common name	Khulkhula
Family	Fabaceae
Parts of plant used	Leaves
Disease treated	Digestion problem in animals, stone problem in human.
Formulation	Leaves paste is made and given to animals. Leaf extract and jaggery used for stone problems.
Source of collection	Wild

29.

Botanical name	*Ricinus communis* (L.)
Common name	Yerandel
Family	Euphorbeacea
Parts of plant used	Whole plant
Disease treated	Jaundice, snake bite
Formulation	Seed oil is used in muscular pain. Root powder is used to treat jaundice. Leaf extract used to treat snake bite. Oil obtained from leaf is applied to scalp for hairfall problems.
Source of collection	Wild

30.

Botanical name	*Butea monosperma* (Lam.) Taub
Common name	Palas
Family	Fabaceae
Parts of plant used	Leaves and bark
Disease treated	Tooth ache , cough and cold
Formulation	Leaf extract vapour are taken for cough and cold and decoction of bark with neem is taken for toothache.
Source of collection	Wild

31.

Botanical name	*Dalbrgia sisso* (DC.)
Common name	Shisu
Family	Fabaceae
Parts of plant used	Leaves
Disease treated	Jaundice, dysentery
Formulation	Leaves extract and jaggery given thrice a day.
Source of collection	Wild

32.

Botanical name	*Erythrina indica* (Lam.)
Common name	Laavang
Family	Fabaceae
Parts of plant used	Bark, flower
Disease treated	Immunity, obesity
Formulation	Bark extract given with beetroot juice to enhance immunity. Flower petal dried and roasted given thrice a day to obese person.
Source of collection	Wild

33.

Botanical name	*Pedilanthus tithymoloides* (L.) Poit
Common name	Kamtha
Family	Euphorbiaceae
Parts of plant used	Leaves
Disease treated	Asthma
Formulation	Leaves are given to chew.
Source of collection	Wild and cultivated

34.

Botanical name	*Ipomoea alba* (L.)
Common name	Bhotar
Family	Convovulaceae
Parts of plant used	Leaves, flower
Disease treated	Intestinal obstruction and scorpion bite
Formulation	Leaf crushed and applied over stomach around navel. Flower are used in treating scorpion bite.
Source of collection	Wild

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35.

Botanical name	*Bauhinia racemosa* (Lam.)
Common name	Apta
Family	Caselpinaceae
Parts of plant used	Leaves, stem bark
Disease treated	Dysentery, menstrual problem
Formulation	Leaf juice with little asafoetida help to aid dysentery. Bark is dried and powder is taken orally or month.
Source of collection	Wild

Conclusion

Tribals living here in this villages using their traditional knowledge system to cure different diseases. They use these plant parts as a source of drug through trial and error mothod and the process is experienced over hundreds of years.

Let this data could be useful for students, researchers and individuals for various purpose in future.

Future scope

The study in the Palghar district revealed that about 35 varieties of plant species of which leaves, bark, flowers, inflorescence, tubers, roots, bulbils, fruits and seeds are mainly used for medicinal properties. The total plants are collected and stored with detailed information regarding scientific name, common name, the purpose of uses for future reference and study depicted in. Present work documented 35 wild edible plant species and given us enough information about medicinal habits of rural people here. Rural areas like these villages, they are using their traditional knowledge system to cure different diseases. They use plant as a source of drug through trial and error method and the process is experienced over hundreds of years. Further investigation on their phytochemical and neutraceutical studies may provide better nutritional and medicinal sources for the future.

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