



PHYTOSOCIOLOGICAL ASSESSMENT OF MEDICINALLY IMPORTANT PLANTS UTILIZED BY BHILALA TRIBE OF MANAWAR TEHSIL IN DHAR DISTRICT OF MADHYA PRADESH

ALKESH MUWEL, DR.KAMLA SHIVANI AND DR.ARUNR KHER

DEPARTMENT OF BOTANY,
GOVT.HOLKAR SCIENCE COLLEGE,
INDORE - 452001 (M.P.), INDIA.

ABSTRACT: The present paper focuses on the Phytosociological Assessment of medicinally important plants utilized by Bhilala tribe of Manawar tehsil in Dhar district of Madhya Pradesh India. Survey was collected between 5th January 2018 to 1st July 2020 through intensive interviews of 20 senior citizens of Dhar district. A total of 15 species belongs to 15 genera and 12 families were recorded. Relative frequency, Relative density, was noted by quadrats method. It was reported from ten village that the maximum relative frequency 9.43 of 03 plants (*Cassia tora*, *Xanthium strumarium* and *Tridax procumbens*) and minimum relative frequency 2.83 of 01 plants (*Pergularia daemia*) and the maximum relative density 26.16 of 1 plant (*Cassia tora*) and minimum relative density 1.16 Of 1 plant (*Holoptelea integrifolia*).

Key word: Phytosociological assessment, Relative frequency, Relative density.

INTRODUCTION

In most of the developing countries, 80% of the people use traditional plants for various ailments besides the use of these plants in medicine, they are ecologically important for our ecosystem also hence such studies shall lead to their conservation. They are also dependent on forest for their economic livelihood. Bhilala are dependent on **Badwa** (Health healer) for health problems. Their knowledge is explored by several scientists but not all. Therefore the objective of the present study is to explore the traditional medicinal plants being used in Bhilala tribe in Manawar tehsil of Dhar district of Madhya Pradesh (India).

India is one of the oldest countries where most of the people had and still have knowledge about medicinal plants. According to Puspangadan (1995) the Rig-Veda written during 4500 BC to 1600 BC believed to be the oldest repository of human knowledge about medicinal usages of plants. More than 43% of the total flowering plants are reported to be of medicinal importance. In the country S.K. Jain (1962); Bhattacharya and Dubey (2004); Wagh and Jain (2010); Diwanji, (2011); Sinhababu and Benerjee (2013); reported utility of plants by tribal in several human and cattle diseases.

Phytosociology is the branch of science which deals with plant communities, their composition and development, and the relationship between the species within them. Riparian plant communities along the rivers are dynamic, species rich Salo *et. al.* (1986); Kalliola & Phuhakka (1998); Nilsson (1991) and sensitive to anthropogenic interference Malanson (1993) resulting in disturbance of adapted communities.

STUDY AREA

Dhar district lies between the latitude of 22°14' - 23° North and the longitude of 74° 28' to 75° 43' East and is situated in the South-Western part of Madhya Pradesh. Five villages of the district Dhar are selected for the present study. These five villages are 135 and 140 km away from Indore in North West of Madhya Pradesh.

MATERIALS AND METHODS

The work was initiated with a meeting between first authors (who belongs to the same tribe) with 20 senior informants (60-95 years old) of the Bhilala community. Data was collected between 5th January 2018 to 1st December 2021 through intensive interviews of 20 senior citizens of Dhar district. Observations and discussions were held during field survey. Herbarium is prepared for identification of plants species during tenure of conducting the present study. A total of 411 hours were spent for interview and field survey.

For the study of % frequency and density, quadrat size 10m×10m has been used and analyzes relative frequency and relative density as per Curtis and McIntosh (1950). Following formulae have been used.

$$\% \text{Frequency} = \frac{\text{Number of sampling units (quadrates) in which species occur} \times 100}{\text{Total number of sampling units (quadrates) studied}}$$

$$\text{Relative frequency} = \frac{\text{Frequency value of a species} \times 100}{\text{Sum of frequency value of all species}}$$

$$\text{Density} = \frac{\text{Total number of individual in all sampling units (quadrates)}}{\text{Total number of sampling units (quadrates) studied}}$$

$$\text{Relative density} = \frac{\text{Density value of a species} \times 100}{\text{Sum of density value of all species}}$$

TAXONOMIC IDENTIFICATION

The wild medicinal plants reported by the natives were collected during field surveys and were identified with the help of senior renowned taxonomist Retired Professor A.B. Seerwani and confirmed with the help of available literature.

RESULTS AND DISCUSSIONS

Present study revealed that Bhilala tribe is more dependent on these wild plants for health care than allopathy. A total of 15 plants species of 12 family have been reported in the paper which are used to treat different problems in human beings most of them are being used for fever (5 species) and abdominal pain (3 species). Use of bark of *Azadirachta indica* for jaundice by Choudhary and Upadhyay (2012) while in our study Bhilala are using leaves of this plant species to check diarrhea in cattle.

The detailed findings and observations of the present study are mentioned as under:

Table-1

Use of medicinal plants parts to treat various diseases in human beings by Bhilala Tribe in five villages of Dhar district

S.No	Local Name	Botanical Name	Family	plant Part	Disease
1	Jata shankari	<i>Elephantopus scaber</i>	Asteraceae	Root	Fever
2	Popati	<i>Physalis minima</i>	Solanaceae	Stem	Fever
3	Moyras	<i>Pergularia daemia</i>	Asclepiadaceae	Root	Fever
4	Oontkata	<i>Solanum sp.</i>	Solanaceae	Root	Fever
5	Valla	<i>Holoptelea integrifolia</i>	Ulmaceae	Bark	Fever
6	Hingot	<i>Balanites aegyptiaca</i>	Balanitaceae	Seed	Abdominal pain
7	Rajan	<i>Corchorus capsularis</i>	Tiliaceae	Seed	Abdominal Pain
8	Kavidodi	<i>Grewia asiatica</i>	Tiliaceae	Seed	Abdominal Pain
9	Lal sengali	<i>Indigofera enneaphyll</i>	Fabaceae	Root	Snake bite
10	Datura	<i>Datura metel</i>	Solanaceae	Root	Scorpion bite
11	Sindhi	<i>Phoenix sylvestris</i>	Palmae	Leaf	Headache
12	Puwadiya	<i>Cassia tora</i>	Caesalpinoideae	Seed	Wound healing
13	Aadhashish	<i>Xanthium strumarium</i>	Amarantaceae	Fruit	Headache
14	Majari	<i>Martynia diandra</i>	Pedaiaceae	Seed	Scabies
15	Aalunighas	<i>Tridax procumbens</i>	Compositae	Leaf	Wounds

The above table is depicting the use of various plant parts including leaf, stem, seed, Bark and root that are used by the tribal people of five villages for treatment of different kinds of diseases like, Fever, Abdominal pain, Snake bite, Scorpion bite etc. in human beings.

The above findings are summarized with the help of following figure which shows that in five villages, out of 15 plants studied there were 05 plants whose roots are used, 01 plant Bark is used, 05 plants seeds are used, 02 plants leaves are used, 01 plant stem is used and 01 plants fruit for treatment of various diseases in human beings.

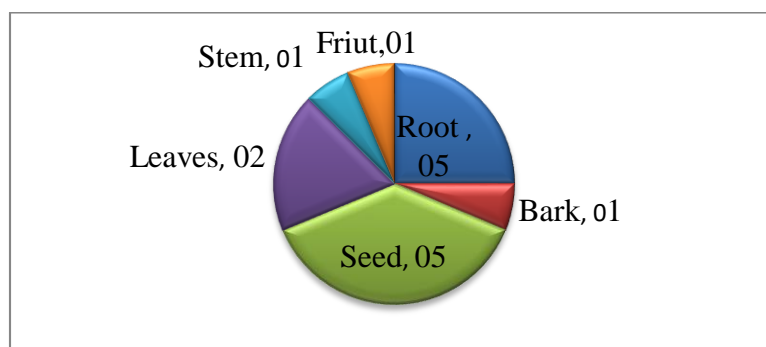


Figure-2: Number of plant part used as medicine of five villages of Manawar tehsil in Dhar district

❖ **Way of administration of different parts of plant species:** The procedure of administering different plant parts for treatment of various diseases is mentioned as under:

1. Jata shankari- *Elephantopus scaber*- Small amount of root extract is given orally as well as applied on the whole body.
2. Popti- *Physalis minima* – Decoction of stem pieces is given orally to the patients.
3. Moyras- *Pergularia daemia*- Root is grinded and given orally (in the form of ghutee).
4. Oontkata-*Solanum sp.*- Aqueous extract of rsoot is given orally to the patient only once.
5. Valla- *Holoptelea integrifolia*- Bark is cut in to small thread like and twine and tied around the neck during fever up to one week.
6. Hingot– *Balanites aegyptiaca* – Seed pest is given orally with water in abdominal pain.Rajaan- *Corchorus capsularis* - Aqueousseed paste or seed solution is given orally to children.
7. Rajaan- *Corchorus capsularis* - Aqueous seed paste or seed solution is given orally to children.
8. Kadvidodi- *Grewia asiatica* -Seeds are crushed in water and the seed solution is given orally once to the patient.
9. Lalsengali- *Indigofera enneaphylla* – 10-15gm roots are powder and mix in 25 gm ghee after 5 to 10 min. it was sieved & given to patient.
10. Dhatura- *Datura metel* -Root paste is applied in scorpion bite.
11. Sindhi- *Phoenix sylvestris* -Leaflets are used in taboo and totem.
12. Puandya- *Cassia tora*- Seed paste is applied on the ulcer and boils.
13. Aadhasheesh - *Xanthium strumarium* -Dried fruit is tied around patient's ear with the help of thread.
14. Manjari- *Martynia diandra* – Roasted seed paste is applied on eczema and ring worm.
15. Aloni Ghas or Patharchata- *Tridax procumbens* - Two to three drops of leaf extract is being applied on wound.

Table-2

Phytosociological Assessment of selected medicinally important plants of five villages of Manawar tehsil in district Dhar.

	Name of the plant species	Total no. of quadr. Studied	Total no. of Quadrat in which sp. Occurred	Frequency percentage	Relative Frequency	Total no. of ind.of sp. in all quadrats	Density	Relative Density
1	<i>Elephantopus scaber</i>	10	08	80	7.54	210	21.0	6.81
2	<i>Physalis minima</i>	10	04	40	3.77	42	4.2	1.36
3	<i>Pergularia daemia</i>	10	03	30	2.83	80	8.0	2.59
4	<i>Solanum sp.</i>	10	09	90	8.49	197	19.7	6.39
5	<i>Holoptelea integrifolia</i>	10	04	40	3.77	36	3.6	1.16
6	<i>Balanites aegyptiaca</i>	10	06	60	5.66	84	8.4	2.72
7	<i>Corchorus capsularis</i>	10	06	60	5.66	125	12.5	4.05
8	<i>Grewia asiatica</i>	10	08	80	7.54	201	20.1	6.52
9	<i>Indigofera enneaphyll</i>	10	09	90	8.49	204	20.4	6.62
10	<i>Datura metel</i>	10	07	70	6.60	164	16.4	5.32
11	<i>Phoenix sylvestris</i>	10	07	70	6.60	82	8.2	2.66
12	<i>Cassia tora</i>	10	10	100	9.43	806	80.6	26.16
13	<i>Xanthium strumarium</i>	10	10	100	9.43	491	49.1	15.93
14	<i>Martynia diandra</i>	10	05	50	4.71	68	6.8	2.20
15	<i>Tridax procumbens</i>	10	10	100	9.43	303	30.3	9.83

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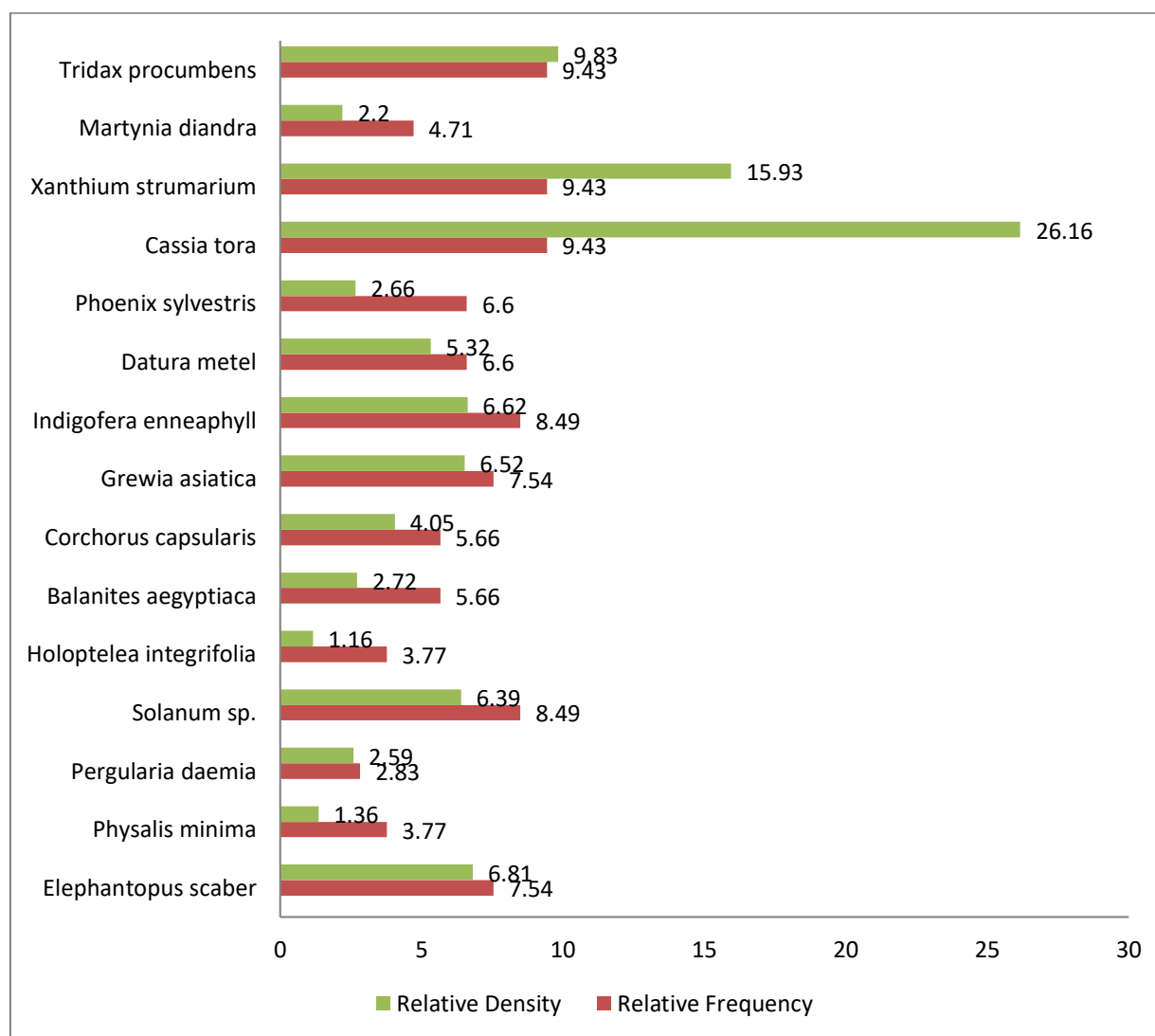


Figure-3: Relative frequency and Relative Density of various plant species of five villages of Manawar tehsil in district Dhar.

CONCLUSION

Bhilala tribe is well known for rich population of tribals. These tribal people are very rich in their culture, tradition and faith on natural resources and nature. These tribal's' believe on recovery of ailments from various diseases with the help of their surrounding flora and fauna.

The present study is carried out in five villages of Bhilala tribe including Badiya, Mandavda, Aamsi, Padla and, Boharla, of Dhar district of Madhya Pradesh. This study contributed of medicinally important plants with their frequency of citations together with the part used disease treated and methods of application among the tribal communities of Dhar district. Data collected through field trips are compiled into an inventory exhibiting the plants reported and their frequency of citations.

It was reported from **five** villages that the maximum relative frequency 9.43 of 03 plants (*Cassia tora*, *Xanthium strumarium* and *Tridax procumbens*) and minimum relative frequency 2.83 of 01 plants (*Pergularia daemia*) and the maximum relative density 26.16 of 1 plant (*Cassia tora*) and minimum relative density 1.16 Of 1 plant (*Holoptelea integrifolia*).

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PHOTOGRAPHS



Datura metel



Xanthium strumarium



Phytosociological study in field work