

Traditional application of some plants used to cure diabetes in Debra P.S. of Paschim Medinipur District of West Bengal- A retrospection

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ABSTRACT

Traditional uses of medicinal plants to get rid of various diseases have become a culture in different rural and forest areas of West Bengal. Among various common diseases, diabetes is one of the majors complain of the district. Diabetes is a metabolic disorder arises from malfunctioning of the body's pancreas. Apart from the capacity of body, climatic factors and food habits are other two major causes of diabetes in the said area. The dominated tribe of the district is santhal, munda, majhi etc. Present authors trying to summarize the data, with the interaction from different medicine men, vaidyas, ojhas, herbal healers, Gunin, knowledgeable persons in different survey and document the specific formulation of using plants. Survey was carried out from March, 2016 - November, 2017 in different areas of Debra P.S. of Paschim Medinipur district. Each survey was done through interaction of medicine men, vaidyas, ojhas, herbal healers, Gunin, knowledgeable persons in Bengali language with a semi-structure questionnaire method. Valuable information came out in each day's interaction were documented with their scientific name with proper author's citation, family, local name, parts used and method of traditional application. A total of 13 plants belonging to 13 Genera and 11 families were recorded viz., *Azadirachta indica* A.Juss., *Cajanus cajan* (L.) Huth, *Catharanthus roseus* (L.) G.Don., *Centella asiatica* (L.) Urb., *Coccinia cordifolia* (L.) Cogn. are some of the medicinal plants which was documented after survey. Out of these plant species 8 belonged to herbs (61.53%), 1 shrub (7.69%), 1 undershrub (7.69%), 2 climbers (15.38%) and 1 tree (7.69%). The most dominated families are Cucurbitaceae and Fabaceae in the documentational work. Attempts are made to document the various plants which have ailment-curing property for acquiring knowledge of present interested persons including students as also in future before demise of the knowledgeable persons. This documentation will also enrich the data in TKDL and PBR's.

Key Words - Traditional use, diabetes, santhal, munda, majhi, traditional formulation, medicine men, TKDL, PBR's.

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INTRODUCTION

Interests in ethno-botanical explorations have been increased in recently at the National and International level. A perusal of the literature reveals that there is still a huge gap in knowledge

of ethno-medicinal plants and its scientific validation in this part of the world. Traditional use of plants and plant parts has been a deep-rooted practical knowledge in the culture and livelihood of the people living in the remote parts of the World

and has been using different medicinal plants in their daily healthcare practices. According to the World Health Organization (WHO) about 65-80% of the World's population in developing countries depending essentially on plants and plant derived compounds for their primary health care (Correa, C. M., 2001).

Diabetes mellitus is one of the most common metabolic disorders that arises from malfunctioning of body's mechanism of the response of peripheral organs to some hormone, or both (Diabetes Atlas, 2003),(Chakraborty R, Rajagopalan R. 2002) and has a significant impact on the health, quality of life of patients as well as on the health care system. According to WHO report, Globally, approximately 347 million people or 5-8% of the Global population is estimated to be affected by this disease. Diabetes now is becoming the third "killer" of mankind along with cancer, cardiovascular and cerebrovascular disease (Chakraborty R., Rajagopalan R. 2002), (Bowling A.C., Beal M.F. 1995). It has also been predicted that by the year 2025, more than 75% of people with diabetes will reside in developing countries. A large number of plants and plant-parts have been investigated for their beneficial role and anti-diabetic properties (Chakraborty R., Rajagopalan R. 2002). In view of its medical importance, the present study focused to know the traditional medicinal plants wealth that is being used by the tribal and other than the tribal people of the study area against diabetes.

OBJECTIVE

1. Survey at remote villages and forest area of Debra P.S. of Paschim Medinipur district.
2. To conduct interview with tribal people for knowing the traditional use of plants specially for medicinal purposes.
3. Enumeration of medicinal plants.
4. Formulation and method of application of traditional medicine.

Duration of Study: From March, 2016-Nov, 2017

METHODOLOGY

Survey was carried out from from March, 2016- Noverber, 2017 in different areas of Debra P.S. of Paschim Medinipur district. Each survey was done through interaction of medicine men, vaidyas, ojhas, herbal healers, Gunin, knowledgeable persons in Bengali language with a semi-structured and open-ended questionnaire method (Jain S. K., 1995). Valuable information came out in each day's interaction were documented with their scientific name, family, local name, parts used and method of traditional application. At least 10 surveys were done to document the 13 plants.

RESULT AND DISCUSSION

The total of 13 medicinal plants species belonging to 13 genera and 11 families were found to be used by the local people of the area surveyed for treatment of diabetes. It was observed that plant parts used for the treatment include leaves, roots, fruits, and seeds as well as whole plants. Almost all the plant/plant extracts were found to be prepared in aqueous solution and were consumed during the early hours of the day in empty stomach. In the present survey, a total 13 plants species belonging 13 genera and 11 families were recorded. Out of these plant species 8 belonged to herbs (61.53%), 1 shrub (7.69%), 1 undershrub (7.69%) 2 climbers (15.38%) and 1 tree (7.69%). For each species scientific name, local name, family, habit, mode of uses parts used are provided. The most frequently used species for the treatment of diabetes in Debra P.S. of Paschim Medinipur district are *Ageratum conyzoides* L.; *Andrographis paniculata* (Burm.f.) Wall.; *Azadirachta indica* A. Juss.; *Cajanus cajan* (L.) Millsp.; *Catharanthus roseus* (L.) G. Don.; *Centella asiatica* (L.) Urban.; *Coccinia cordifolia* (L.) Cogn.; *Curcuma longa* L.; *Momordica charantia* L.; *Murraya koenigii* (L.) Spreng; *Musa sapientum* L.; *Scoparia dulcis* L. *Trigonella foenum-graecum* L. Distribution of medicinal plant species in the families shows variation. A single species in each was recorded by 11 families. The survey indicated that the common medicinal plant families in the study area are Acanthaceae, Apocynaceae, Apiaceae, Asteraceae, Cucurbitaceae, Fabaceae, Meliaceae, Zingiber-

aceae, Musaceae, Rutaceae, Plantaginaceae. It is to mention here that medicine men cannot be able either to start or to cure diabetes, they only prescribe verbally some traditional formulations to keep diabetes under control only. Some literature study also enriches the researchers that regular bisk physical exercise /walking also enhance to keep the same under control.

Table 1- List of medicinal plants and their traditional formulation used in diabetes in Debra P.S. of Paschim Medinipur district of West Bengal.

Sl. No.	Scientific Name	Habit/Habitat	Local Name	Family	Parts used	Preparation of medicine	Method of Application
1	<i>Ageratum conyzoides</i> L. Fig.no.1	Herb/ Terrestrial	Ochunte	Asteraceae	Whole plant	Whole plant is grinded carefully to take a mixture of one cup.	Patient has to take the same in empty stomach for two times daily regularly.
2	<i>Scoparia dulcis</i> L. Fig.no.12	Herb/ Terrestrial	Madhumouri	Plantaginaceae	Leaves	Adequate number of fresh leaves are to collect.	8-10 leaves are chewed for 3 times daily before meal regularly.
3	<i>Andrographis paniculata</i> (Burm.f.) Wall. Fig.no.3	Herb/ Terrestrial	Kalmegh	Acanthaceae	Whole plant	Adequate amount of plant extract is to be made.	One teaspoonful extract is to take in the morning in empty stomach to keep it under control.
4	<i>Cajanus cajan</i> (L.) Huth Fig.no.13	Under shrub/ Terrestrial	Arahar	Fabaceae	Root	Adequate amount of juice is made from immature root.	One teaspoonful juice is to take in morning in empty stomach regularly.
5	<i>Catharanthus roseus</i> (L.) G. Don Fig.no.9	Herb/ Terrestrial	Nayantara	Apocynaceae	Leaf	Fresh leaves are to collect.	Two fresh leaves are to be chewed in morning in empty stomach in a regular basis.
6	<i>Centella asiatica</i> (L.) Urb. Fig.no.2	Herb/ Terrestrial	Thankuni	Apiaceae	Leaf	Fresh leaf extract of adequate amount is to be made.	3 teaspoonful leaf extract is to take in empty stomach for 24 days initially without any interruption.
7	<i>Coccinia cordifolia</i> (L.) Cogn. Fig.no.4	Climber/ Terrestrial	Telakucha	Cucurbitaceae	Leaf	Adequate amount of leaf is to collect.	Young leaves used as vegetable in prime meal for diabetic patient regularly.
8	<i>Curcuma longa</i> L. Fig.no.11	Herb/ Terrestrial	Halud	Zingiberaceae	Rhizome	Fresh rhizome of about the length of middle finger of a mature male person of the plant is to collect and make it an extract.	Extract is mixed with one teaspoonful honey and taken in the morning in empty stomach regularly.
9	<i>Momordica charantia</i> L. Fig.no.5	Climber/ Terrestrial	Uchchhe	Cucurbitaceae	i)Fruit	Fruit extract is to be made.	Half cup of fruit juice is to take in the morning in empty stomach regularly.
					ii)Whole plant	An extract of whole plant is to be made.	Half cup of the extract is to take twice daily regularly in empty stomach.
10	<i>Murraya koenigii</i> (L.) Spreng. Fig.no. 8	Shrub/ Terrestrial	Curry Patta	Rutaceae	Leaf	Leaf extract is to be made.	2-3 teaspoonful extract to take in the morning in empty stomach regularly for life long.
11	<i>Musa sapientum</i> L. Fig.no.10	Herb/ Terrestrial	Kala	Musaceae	Unripe fruit	Unripe fruit is to collect	It is to be taken as vegetable in prime meal regularly for diabetic patient to control blood sugar level.
12	<i>Azadirachta indica</i> A. Juss. Fig.no.6	Tree/ Terrestrial	Neem	Meliaceae	Leaf	Crude leaf extract is to be made.	take 2-3 teaspoonful in empty stomach in the morning regularly to keep it under control.
13	<i>Trigonella foenum-graecum</i> L. Fig.no.7	Herb/ Terrestrial	Methi	Fabaceae	Seed	Seeds of adequate amount is to grind.	One teaspoonful to take in the morning and evening in empty stomach regularly to keep diabetes under control.

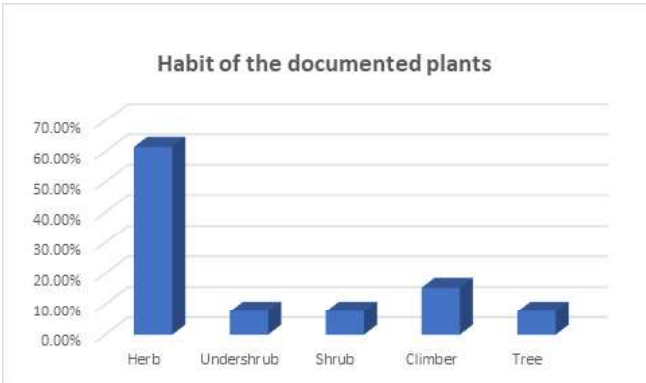


Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5



Fig. 6



Fig. 7



Fig. 8



Fig. 9



Fig. 10



Fig. 11



Fig. 12



Fig. 13



Fig. no.14 (medicine man Ashoke Dalbera, in Garhnischintapur of Debra P.S., during interaction)

SIGNIFICANCES OF THE WORK

- The World Health Organisation (WHO) suggested that as many as about 80% of the World population depend on traditional medicine for their primary health care need.
- Type-II diabetes in our country is now -a-day becoming epidemic gradually.
- Allopathic treatment is effective but the treatment process is expensive and containing many side effects. So, it should be avoided some times.
- It has been revealed that People can safely survive with the help of proper traditional low-cost medicine
- But the traditional knowledge about plants is transmitted by local vaidyas, ojhas, herbal healers, gunins, etc. through orally only.
- Young generations are less interested about this ancient knowledge.
- So being a student of botany, Knowing and documenting the traditional knowledge will give new path to the diseased people of the society.
- This documentation will greatly help in enriching the data in Traditional Knowledge Digital Library (TKDL) and People's Biodiversity Registers (PBRs)

CONCLUSION

From our short-term work, it can be concluded that ethnomedicinal survey and its proper documentation is one of the promising methods for medication and also for the proper identification of plants to the botanist and common people also. In case of medication, from economic point of view, our work is beneficial also.

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