# Traditional Medicinal Plant *Holarrhena antisenterica* (L.) Wall. Ex A. DC. In the Treatment of Diabetes

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***Research Article***

***Abstract:*** The present study was conducted in the region of Ralegaon Tahsil, Dist. Yavatmal. The study was carried out during the period of June 2010 to August 2011. A number of villages were visited in this region. The information was documented involving field study by contacting and interviewing traditional healers for plants used in the treatment of diabetes. *Holarrhena antidysenterica* Wall. Ex. A. DC. (Apocynaceae) was selected for the study. The patients who had used medicines prepared by healers were also interviewed to document information of age group 9 to 76 years. To establish identity, the plant is collected for making herbarium record and deposited in the Department of Botany, Shri Shiwaji Science and Arts College, Chikhli, Dist. Buldhana (M.S.).

***Key Words****:* *Holarrhena antidysenterica*, Traditional healers, Diabetes, Ralegaon Tahsil.

## Introduction:

India is one of the world's twelve leading biodiversity center with the presence of over 45,000 different plant species, out of this about 15,000-20,000 plants have good medicinal properties of which only about 7,000-7,500 are being used by traditional practitioners. All traditional medicines have their roots in folk medicines and household remedies. WHO has listed 20,000 medicinal plants used in different parts of the world. Other estimates indicate the number to range between 35,000 and 70,000 worldwide (Lewington, 1993; Bhattarai and Karki, 2004). WHO has estimated that 80% of the world's populations rely primarily on traditional medicine (WHO, 1978; Okerele, 1992). In India, it is reported that traditional healers use 2500 plant species and 100 species of plants serve as regular sources of medicine (Pei, 2001). During the last few decades there has been an increasing interest in the study of medicinal plants and their traditional use in different parts of the world. Traditional medical knowledge of medicinal plants and their use by indigenous cultures are not only useful for conservation of cultural traditions and biodiversity but also for community healthcare and drug development in the present and future Pei (2001).

*Holarrhena antidysenterica* is a typical Indian medicinal plant. In this study our attention has been focused on *Holarrhena antidysenterica* under the family of Apocynaceae is one such plant, popularly known as "Indrajav" is a shrub, distributed throughout India up to an altitude of 4,000 ft. In Indian traditional medicine, the plant has been considered a popular remedy for the treatment of dysentery, diarrhea, intestinal worms (Kavitha *et. al*. 2004: Sing K.P., 1986) and the seeds of this plant are also used as an anti-diabetic remedy in Asian countries. The scientific study about this plant for the management of diabetes is scanty (Pankaj *et. al*. 2005).

However, no such work has been reported on the anti-diebetic effects of bark of *Holarrhena antidysenterica*. Keeping this in view, the present study has been undertaken to document the anti-diabetic effects of bark of *Holarrhena antidysenterica* in this region.

Yavatmal district is located in the region of Vidarbha, in the east-central part of the Maharashtra state. Yavatmal district is located between 19º26 to 20º42 North latitudes and 77º18 to 79º98 East longitudes.It is bounded on the north by Amravati District, to the northeast by Wardha District, to the east by Chandrapur District, to the south by Andhra Pradesh state and Nanded District, to the southwest by Hingoli

District, and to the west by Washim District. The tribals invaded and localized in the Ralegaon Tahsil are Gond, Kolam and Paradhan. The survey includes all the tribal ranges and nearby villages of the study area.

The objective of this study was to interact with local traditional healers and document their knowledge on medicinal plants, their usage and the types of diseases treated etc. As far as the Yavatmal district is concerned, meagre reports are available on the floristic composition and indigenous ethnomedicinal information present with the tribal of this area. From the foregoing account, it is clearly evident that, the investigations on ethnomedicinal aspects of the tribal regions of Ralegaon tahsil have not been explored in spite of its richness in plant diversity and varied cultural practices.

## Material and Methods:

The study was carried out in the tribal region of Ralegaon tahsil, Dist. Yavatmal during the period, May 2010 to August 2011. A large number of places were visited in tribal localities of Ralegaon tahsil. The tribal villages were surveyed through periodical tours in tribal localities. Special attention was paid to record information from local Vaidyas, Hakims and traditional herbal healers. These informants were traditional healers themselves or had tradition of healing in their families and had knowledge of the medicinal use of the plants. The information was documented involving field study by contacting and interviewing Vaidyas, Hakims and traditional herbal healers for plants used in the treatment of diabetes.

The tribals who had used these medicines prepared by local ethnic medicine-men were also interviewed to document ethnobotanical information of age group from 9 to 76 years and were resident of tribal pocket in the district. To establish identity, plants were collected with the help of herbal healers and practitioners for making herbarium record. The botanical names, vernacular names, family and method of treatment and mode of preparation of drug has been documented. The dictionary of Indian Folk Medicines by Jain (1991), Indian Materia Medica by Nadkarni (1982) was also consulted to compare with earlier reports by different ethno-botanists. The present documentations were not earlier reported.

Voucher specimens of medicinal plants were collected, prepared and identified. All the preserved specimens were deposited at the Department of Botany, Amolakchand Mahavidyalaya, Yavatmal, Dist. Yavatmal (M.S.).

## Observations and Result:

The tribals invaded and localized in the Ralegaon tahsil are Gond, Kolam and Pardhan. These tribes as per socio-religious rituals worship nature. The ethno-medico-botanical study was conducted to record plants used in pockets of tribal areas. As per information collected from herbal healers and Vaidyas these plants are locally available in abundance and are being used since ancient times. The wealth of medicinal plant knowledge among the people of this tahsil is based on hundreds of years of beliefs and observations. This knowledge has been transmitted orally from generation to generation; however it seems that it is vanishing from the modern society since younger people are not interested to carry on this tradition.

Tribals collect different parts of plant for medicinal purposes. The tribals and peoples of adjoining areas were observed suffering from diabetes. The medicinal plant *Holarrhena antidysenterica* (Fig. 2.) is the most commonly used herb in the treatment of diabetes in this region is described.

The dosage for control of this disease is described as below:

The patients suffering from diabetes cured by oral administration of 50 ml decoction of bark of *Holarrhena antidysenterica* twice a day before meals until cure. Decoction is prepared by taking 1 liter water and 100 gm bark powder. The patients cured by using this treatment in different villages are shown in Fig. 1.

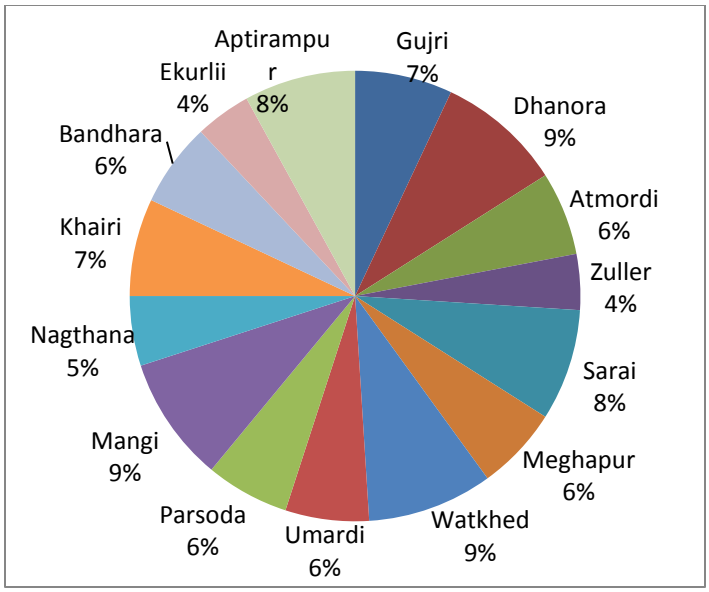


***Fig 1: Patients cured from diabetes.***

***Fig. 2. A twig of Holarrhena antidysenterica***

## Discussion:

A number of studies on ethnomedicinal plants and herbal medicines have been conducted in the past and plants have been reported for being used medicinal purpose by tribals in several countries. The ethnobotanical survey can bring out many different clues for the development of drugs to treat human diseases. Safe, effective, and inexpensive indigenous remedies are gaining popularity equally among the people of both the urban and rural areas, especially in India and China (Katewa *et al*. 2004).

The bark and seeds of *Holarrhena antidysenterica* are used to treat amoebic dysentery, diarrhea, asthma, bronchopneumonia, malaria (Kumar and Ali, 2000). Decoction of seeds was recommended by "Bhavaprakasha" in diabetes (Ghose ,1998).

Tribals when suffered from the diabetes they apply herbal drugs prepared by traditional healers. These plants are found in their local habitat where facilities of modern hospitals do not exist. The tribal community depends for their medical aid on local and traditional healer existing near habitat. The number of the patients interviewed in 15 villages for using these herbal medicines in the treatment of diabetes is presented in figures. 1.

Earlier the tribals of the region were harvesting the medicinal plants at a particular time and date only and have belief that at this particular time it has more therapeutic value. It is evident from the modern science that at particular time the herb contains optimum active ingredients. These types of traditional harvesting practices will be helpful in providing quality raw material on sustainable basis and tool for conservation.

## Conclusion:

The information as a outcome of study will serve as a useful tool to botanists, pharmacologists, phytochemists, practitioners of herbal medicine, foresters, planners and administrators in the preparation of action and development plans for the conservation as well as herbal drug industry in the tribal tracts for providing self-employment opportunities and improving and uplifting the life, economy and social status of the tribal and rural populations.

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