

SHORT COMMUNICATION

Adverse effects of overdose of ethnomedicinal drugs observed by Bhil tribe of Ratlam district (Madhya Pradesh), India

JADHAV D*

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ABSTRACT

While humans suffered from innumerable disorders and diseases in the olden times, they experimented with plant cures. The primitive people are well acquainted with the properties and uses of plants in their surroundings. They have inherited rich traditional knowledge (TK) of surrounding plants. Such knowledge of economic and other properties of surrounding plants acquired by tribal communities through the experience of ages has been passed-on word of mouth from generation to generation as a part of the cultural heritage. Generally, all of these prescriptions were based on experimentation and observations. The present communication is the outcome of a critical study of these types of statements related to the adverse effects of the overdose. The ancient literature also supports the observations. The author has made one such attempt on the adverse effects of medicines utilizing his study in Ratlam district (M. P.). Some selected ethnomedicinal uses of plants have been studied critically. This appears true from the cases examined in the present study. Due to the adverse effects associated with herbal remedies being largely unknown, this study brought to light some prescriptions and observations on ethnomedicinal plants lending support to the said purpose.

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INTRODUCTION

Aboriginals possess profound knowledge about the properties and uses of plants inhabiting their surroundings. They have inherited rich traditional knowledge of surrounding plants. Such knowledge of surrounding plants acquired by the tribal community by their experience and practice has been passed on from generation to generation as a part of cultural heritage. These people still practice herbal medicines for the treatment of their daily routine ailments (Jain 1981, 1991, 2002, 2004). The knowledge of these medicines is age-old. For them, the use of local herbs is the cheapest way to get the treatment of various health disorders. So far, there is no government clinic in their inhabited

localities. The major driving force for using herbal drugs is the perception that these herbal drugs are natural and safe and have no side effects. In the Bhil tribe usually, there is one elderly person familiar with the use of surrounding plants and is a local physician who is called "Bhopa" who knows all about ethnomedicinal plants which are used in the treatment of various ailments. Their local name, parts used and method of drug preparation and administration dosage and their possible side effects, if taken irregularly, in excessive amounts or combined with some medicines. This paper aims to highlight some selected ethnomedicinal plants' uses and side effects so that these may be used safely. The present communication is the outcome of a critical

*Corresponding author; E-mail: dinj2ad@yahoo.com

Department of Botany, Govt. PG Arts & Science College, Ratlam (M.P.) 457 001

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study of own observations. The ancient literature supports my comments (Khare, 2012; Mahajan *et al.*, 2013; Rastogi *et al.*, 2007). The author is engaged in ethnomedicinal investigations in this district, results of which have been published (Jadhav 2016, 2017, 2018, 2019) earlier. This paper is linked to the same work and is based on the ethnomedicinal uses and adverse effects of some selected ethnomedicinal plants.

Ratlam district lies in the western part of the Malwa Plateau in Madhya Pradesh. Ratlam has an important place in the Railway Map of Madhya Pradesh. Its position as the Divisional Headquarters of Western Railway has considerably contributed to its growth as a Railway Town. The district forms part of the Commissioner's Division of Ujjain. The mathematical limits of this district extend from 23° 05' North to 23° 55' North and from 74° 30' East to 75° 42' East. It is a wide crescent with its concave on the East and widest part in the south. The greatest length of the district extends about 122 km. from southwest to northeast. The district is bounded by Mandsaur district on the north, Jhabua and Dhar on the south, Ujjain on the east and Chittorgarh and Banswara district of Rajasthan State on the west. Shajapur district of Madhya Pradesh and Jhalawar district of Rajasthan also touch the northeastern boundary of Ratlam district. The elevation generally varies from 434 to 549 m above mean sea level. The district comprises an area of 4861 sq. km inhabited by 1,455,069 persons living in 1080 villages covering eight tehsils Viz. Alot, Bajna, Jaora, Piploda, Ratlam, Rawti, Sailana and Tal (Census 2011). Bhils are the principal inhabitants of different villages in the district. According to the 2001 census, the population of the Bhil tribe in the district was 2.26 lac constituting about 23.27% of the total population.

The forests, which occupy a total area of 499.92 sq km or 10.26 %, are of the dry deciduous Vb type (Champion and Seth, 1968). The forests are dominated by Teak (*Tectona grandis* L.f.). Other notable wood species are Sajad [*Terminalia tomentosa* (DC.) Wt. & Arn.], Mahua (*Madhuca indica* Gmel.), Tendu (*Diospyros melanoxylon* Roxb.), Palas [*Butea monosperma* (Lam.) Taub.], Kalam [*Mitragyna parviflora* (Roxb.) Korth.], Dhaora [*Anogeissus latifolia* (Roxb.) Wall. ex Bedd.], Bel [*Aegle marmelos* (L.) Corr.], Bija (*Pterocarpus marsupium* Roxb.) and Bamboo (*Dendrocalamus strictus* Nees.), which constituted a significant chunk of the middle canopy of the forests.

In Ratlam district there are two important rivers: the Chambal flowing north along with its tributaries and the Mahi flowing to the north-west. The climate of the State is generally sub-humid, with an annual rainfall ranging from 700-1200 mm. The minimum and maximum temperatures range between 6 °C and 43 °C in January and May, respectively. The black cotton soil predominates the entire district.

MATERIALS AND METHODS

Extensive field trips were organized from time to time to collect the plant species and data using an integrated approach of botanical collections interviews and questionnaires. These trips were carried out from 2004 to 2008 from different tribal inhabited villages of Ratlam district. In Bhil tribe or village, usually, there is one elderly person familiar with the use of surrounding plants and a local physician called "Bhopa." Bhopa was contacted and taken to the field to collect information about ethnomedicinal plants which are used in the treatment of various ailments, their local name, parts used and method of drug preparation, dosage of administration and their possible side effects. Herbarium specimens prepared following the standard procedure (Jain and Rao, 1978) have been deposited in the herbarium of the Botany department, Govt. Arts and Science College, Ratlam (M.P.). The herbarium specimen were identified with the help of standard Floras (Mudgal *et al.*, 1997; Singh *et al.*, 2001; Verma *et al.*, 1993).

RESULTS AND DISCUSSION

Herbal remedies under conventional therapy are known to show many benefits to humans, but one should be thoroughly familiar with their side effects at average and large doses. This paper highlighted the uses and adverse effects of selected herbal drugs. It is concluded that should know the adverse effects of herbal medicines and their interactions with other prescription drugs to the consumers and physicians. One should also consider other herbal products for the possible risks while using them in cures and treatments.

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ENUMERATION

Botanical Name	Local Name	Family	Plant part	Adverse effects and Interactions
<i>Abutilon indicum</i> (L.) Sweet	Kanghi	Malvaceae	Plant	Female infertility
<i>Achyranthes aspera</i> L.	Andhihjaroi	Amaranthaceae	Seeds	Dyspepsia
<i>Aegle marmelos</i> (L.) Corr. ex Roxb.	Rutaceae	Bilvapatra	Leaf	Impotence, male infertility
<i>Albizia lebbek</i> (L.) Willd.	Mimosaceae	Sirus	Seed	Impotence, male infertility
<i>Aloe barbadensis</i> Mill.	Liliaceae	Gwar-patho	Resin	Abdominal pain, Loose motion
<i>Allium sativum</i> L.	Liliaceae	Lasun	Clove	Gastric ulcer
<i>Argemone mexicana</i> L.	Papavera-ceae	Pili kateri	Latex	Eye irritation
<i>Azadirachta indica</i> A. Juss.	Meliaceae	Leem	Leaf	Abdominal pain, Loose motion
<i>Cannabis sativa</i> L.	Cannabina-ceae	Ganjo	Leaf	Hallucinations, nausea, blurred vision, numbness, headache, and drowsiness.
<i>Carica papaya</i> L.	Caricaceae	Aran kakdi	Fruit	It should not be used during pregnancy except under medical supervision, Abdominal pain, Loose motion
<i>Cissus quadrangularis</i> L.	Vitaceae	Had jod	Stem	Bone spur
<i>Coriandrum sativum</i> L.	Apiaceae	Dhaniyah	Seed	Impotence, male infertility
<i>Cuminum cyminum</i>	Apiaceae	Jira	Seed	Sweating, High blood pressure
<i>Datura stramonium</i> L.	Solanaceae	Dhaturo	Seed	High doses can cause bizarre behaviour, hallucinations, nausea, blurred vision, headache, drowsiness
<i>Glycyrrhiza glabra</i> L.	Fabaceae	Mulethi	Root	Laryngitis
<i>Lantana camara</i> L. var. <i>aculeata</i> (L.) Moldenke	Verbenaceae	Baramasi	Leaf	Gastrointestinal haemorrhage
<i>Opuntia dellenii</i> (Ker.-Gawl.) Haw.	Cactaceae	Naagaphani	Latex	It may increase the risk of bleeding from throat.
<i>Papaver somniferum</i> L.	Papavera-ceae	Aphim	Latex	It may increase constipation.
<i>Syzygium aromaticum</i> L.	Myrtaceae	Laung	Clove	Mouth sores, Clove may increase the risk of bleeding, Impotence, male infertility, headache, insomnia and anxiety, increased blood pressure, diarrhoea, nervousness, skin eruptions, heart palpitations, or uterine bleeding.
<i>Tamarindus indica</i> L.	Caesalpinia-ceae	Imli	Fruit	Impotence, male infertility
<i>Terminalia chebula</i> Retz.	Combreta-ceae	Harad	Fruit	It should not be used during pregnancy except under medical supervision. Overdose can lead to colicky abdominal spasms and pain and the formation of thin, watery stools.
<i>Zingiber officinale</i> Rosc.	Zingibera-ceae	Adrak H	Rhizome	Ginger may increase the risk of bleeding includes reactions such as headache, insomnia and anxiety. It is also possible that skin rashes may develop as well as asthma attacks, increased blood pressure, diarrhea, nervousness, skin eruptions, heart palpitations, or uterine bleeding.

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