



POISONOUS PLANTS OF DISTRICT GHAZIABAD (U.P.), INDIA

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Abstract

In this paper at present about 18-20 thousand flowering plants are in our country. Out of them many plant species are utilized as food, fodder, medicine and fibre. Quite a few flowering plant species are poisonous. Our knowledge on poisonous plants is important as some of them are used in medicine. The poisonous properties are due to toxic substances such as alkaloids, glucosides, saponins, amines, tannins, resins etc. An account of 27 poisonous plants occurring in district Ghaziabad of Uttar Pradesh (India) has been presented. In this survey, total district area was studied and collected the information of the poisonous plants that are grown, wild, planted, cultivated & naturalized of road sides, park avenues and gardens. The plants were identified with the help of different published flora and herbarium lodged in different places of India, Herbarium of FRI & BSI, Dehradun, CNH, Hawrah, CSIR, Delhi. The information on the poisonous plant's species has been gathered from the tribals during ethno-botanical field survey. The study suggests that the tribal people are not only aware of such poisonous plants and their harmful effects, but also use them judiciously for control of insect-pests, bugs, Mosquitoes and many other harmful organisms.

Key words : Poisonous plants, ethnomedicine, nut, gujjar, balmik, SC, ST, gypsy, old men, Nomad, Ghaziabad.

Introduction

Poisonous plants are those plants, which as a whole or part there of under all or certain conditions and in a manner and in amount likely to be taken or brought into contact with an organism will exert harmful effects or cause death either immediately or by reason of cumulative action of the toxic property due to presence of known or unknown chemical substances in it and not by mechanical action. The poisonous nature of whole plant or any plant part may be due to production of toxic substances such as alkaloids, glucosides, amines, toxalbumins, pi-toxins, resins, saponins, tannins, essential oils, etc., many of which are harmful to man and animal life, at least under certain conditions.

The Ghaziabad district located in the indo-Gangetic plain of north west India, being a heavily industrialized district in Uttar Pradesh, near National Capital Delhi. There are four rivers in the district viz. Ganga River, Yamuna River, Black River, Hindon River and level plain with gradual slope from North to South. There are also some hillocks near Garmukteshwar, Abdullapur, Poonth and Loni, attaining an elevation of 679.156 feet above sea level and the approximate bearings are 77° 7' E To 78° 14' E. Latitude and 28°27' N To 28°55' N. Longitude.

The district covers an area of 1988 Sq. Km. It is bounded by district Moradabad in the East, district Meerut in the North, district Bulandshahr and Gautam Buddha Nagar in the south and by National Capital and Union territory Delhi in the west. These plants have been life supporting for tribal people since ages and their culture is deeply related with forests and Herbs. The poisonous plants of India have been described by few workers". A lot of work has been done on the vegetation of Ghaziabad' and traditional uses of plants but no work has been done specifically on poisonous plants of Ghaziabad". The Tribals and other people found in District Ghaziabad such as Nut, Gujjar, Balmik, Schedule Caste, Schedule Tribes, Gypsy, Nomads, etc.

Methodology

Before launching into the fieldwork, rapport was established with one or two persons preferably the chief, whose guidance was sought and contacts were then established with other tribals of the locality. The local informants were the medicine men, men and women working in the field, village headman, priest. And other community leaders. Study sites were visited with the local medicine men. The persons above the age of 60 years have accurate information regarding their old traditions.

Table 1 :

Plant name	Family	Local name	Use
<i>Abrus precatorius</i> L.	Papilionaceae	Chirui, Chirmithi	The seed powder is given to cattle in case of constipation but if given in higher doses or seeds are consumed accidentally by cattle in the Field, it causes gastrointestinal irritation. nausea, vomiting. Severe diarrhoea, weakness. trembling of legs. etc.
<i>Alangium salvifolium</i> (L.f.) Wang.	Alangiaceae	Anko	Bark of the root. Infusion administered orally in small doses causes transient fall in blood pressure. Depresses heart: in higher dose produces irregular respiration .increases peristaltic movement of the intestine.
<i>Argemone mexicana</i> L.	Papaveraceae	Satyanashi	The seeds are emetic and narcotic: poisonous , if taken in large quantities. The plant when eaten by animals causes diarrhoea and sleepiness.
<i>Balanites aegyptiaca</i> (L.) Del.	Balanitaceae	Hingot	Fruits are purgative and anthelmintic. Leaf decoction is used for washing hairs to get rid of lice by the tribals, The bark juice is considered poisonous. The other parts are also poisonous. When consumed in the larger quantities.
<i>Butea monosperma</i> (Lam.) Taub.	Papilionaceae	Khankra, Dhak	Crushed seeds are used by the tribals as fish poison.
<i>Calotropis procera</i> (Ait) R.Br.	Asclepiadaceae	Akdo	When latex mixed with ammonium chloride is slowly heated on hot iron plate very small quantity of the powder is given orally thrice a day for five days to cure tuberculosis but if given in higher in amount causes poisoning, intake of latex is fatal injurious to eyes causes blindness it is also used as fish poison.
<i>Catharanthus pusillus</i> (Murr.) Don	Apocynaceae	Junglibaramasi	Plant is toxic to cattle, causing temporary blindness or madness with rashes all over the body.
<i>Catharanthus roseus</i> (L.) Don	Apocynaceae	Baramasi	Plant juice is poisonous acts as poison to heart.
<i>Cuscuta rejlexa</i> Roxb.	Cuscutaceae	Amarbel	Intake of plant juice causes depression with nausea, vomiting and abortion Tribals mix the plant with folder to kill enemy's.
<i>Datura metal</i> Linn.	Solanaceae	Dhatura	If whole plant taken than it is toxic and narcotic: seeds are poisonous and used for committing crimes. Intake of the leaves, fruits and seeds causes fatal poisoning, dryness of throat, giddiness, hallucination and staggering: voice is unrecognizable and vision is affected and leads to coma.
<i>Dioscorea bulbifera</i> Linn.	Dioscoreaceae	Vahrikand	The tubers consumption in large quantities causes paralysis of. the respiratory system and even death. Creates severe irritation in mouth. Tribals cut the tuber and place overnight in running water and cook as vegetable.
<i>Dioscorea pentaphylla</i> Linn.	Dioscoreaceae	Kadakand	The tubers are acrid and cause inflammation of mucous membrane of mouth. Tribals cut the tuber and place overnight in running water and cook as vegetable.
<i>Euphorbia hirta</i> Linn.	Euphorbiaceae	Dudhi	Extract of plant has sedative effect on the mucous membrane of the respiratory and genitourinary tract. The latex is injurious to eyes.
<i>Euphorbia neriifolia</i> Linn.	Euphorbiaceae	Danda thor	The latex is acrid. purgative and causes dermatitis. Latex is injurious to eyes. Root decoction is used as abortifacient

Table 1 continued...

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<i>Gloriosa superba</i> Linn.	Liliaceae	kahihari	Tuber extract mixed with <i>Solanum virginianum</i> Linn. root extract is used as abortifacient Intake of tubers is fatal. causes gastrointestinal irritancies, vomiting and purgation.
<i>Holoptelea integrifolia</i> Planch.	Ulmaceae	Banderbati	The crushed stem bark is used as fish poison.
<i>Jatropha curcas</i> Linn	Euphorbiaceae	Ratanjotj Baghbhirand	The seeds are strong purgative. When consumed accidentally or incidentally by cattle or human beings especially children. Induces nausea, vomiting and sense of burning in stomach. Over consumption of seeds leads to unconsciousness.
<i>Jatropha gossypifolia</i> Linn.	Euphorbiaceae	Ratanjotj	Leaves and seeds are purgative and poisonous. If grazed by animals, causes severe vomiting and death.
<i>Lantana camara</i> Linn.	Verbenaceae	Ghaneri	Grazing of cattle causes severe injury to liver, profuse salivation, copious lachrymation. loss of appetite and ultimately death of the cattle.
<i>Melia azedarach</i> Linn.	Meliaceae	Bakain	The poisoning most often results from ingestion of toxic fruits containing uncharacterized resinous fraction. It causes severe irritation. nausea and degeneration of the liver and kidney.
<i>Moringa oleifera</i> lam.	Moringaceae	Sainjna	The extract of the root bark causes severe skin inflammation and skin dermatitis. Root and stem bark are used as abortifacient.
<i>Mucuna pruriens</i> (Linn.) DC.	Fabaceae	Kamach	Pod hairs when come in contact with skin produce itching & irritation and sometimes cause blister and dermatitis.
<i>Nerium indicum</i> Mill	Apocynaceae	Lalkaner	Root is poisonous; used for criminal and suicidal purposes; seeds are used to poison and kill enemy's livestock.
<i>Parthenium hysterophorus</i> Linn	Asteraceae	Gajarghas	Seeds and plants cause eczema and allergic dermatitis on contact. If consumed by livestock. causes severe diarrhea followed by death with severe ulceration in the liver. Gastrointestinal tracts and kidney. It poses danger to the livestock particularly in drought condition.
<i>Ricinus communis</i> Linn.	Euphorbiaceae	Arandi	Intake of higher doses of seed oil is fatal with symptoms of vomiting. colic. gastroenteritis and circulatory collapse; in small quantity cure constipation.
<i>Solanum virginianum</i> Linn.	Solanaceae	Ringni	Root decoction with jaggery is given to ladies in acbolis and for abortion of up to 5 months old foetus. More quantity is poisonous and causes death of mother.
<i>Urginea indica</i> (Roxb.) Kunth	Liliaceae	Jangli- kanda	Excessive consumption of bulb is poisonous causing nausea, strangury and bloody urine. often suppression of urine, gastroenteritis, convulsion of heart and paralysis, followed by death

Generally, two types of interviews were taken, firstly of individual and secondly of groups. Of individuals, persons were selected at random on the way or entering a hut, finding out knowledgeable individuals from the village or also the headman. In group, interviews, more than one individual were approached, after explaining the purpose interviews were taken. Ethno-botanical field trips were conducted in different tribal areas and field areas of

District Ghaziabad during 2007-09. A large number of tribal people and medicine men of the villages knew about the poisonous plants. Information were recorded on these plants and plant parts, which they use for poisoning arrow heads, stupefying fishes, driving away the insects and bugs from hut and killing vermin, body lice and worms. To determine the authenticity of information collected during field work, the data were cross-checked from

different informants. Thus, only the specific and reliable information cross-checked with at least 22 informants has been incorporated. The information provided by the tribals has been compared with the published literature". The collected plants were identified at the Herbarium of FRI & BSI, Dehradun, CNH, Hawrah, CSIR, Delhi.

Enumeration

The plants are arranged alphabetically, each by its botanical name, followed by name of the family and local names in the table 1. The folk uses are described, with details of part(s) used and notes on poisonous symptoms.

Conclusion

The paper deals with 27 poisonous plant species belonging to 18 different families. The poisonous parts of majority of plant species. Were seeds, latex, leaves and root or root bark. Besides these, poisonous parts of some plants were fruits, stem bark, tubers or bulbs and sometimes whole plant also. Some plants causes poisoning to both human beings as well as livestock population, while some causes poisoning to human being only. The poisonous nature of plant or plant part depends mainly on the quantity consumed. In small quantity, plant shows their therapeutic value while in higher quantity, shows their poisonous effects. For example, *Alangium salviifolium* (L.f.) Wang bark extract is used by the tribals to lower down the blood pressure but in higher dose it depresses the heart permanently and causes irregular respiration. Some plants e.g. *Dioscorea bulbifera* Linn. and *Dioscorea pentaphylla* Linn. can be used as food after processing (by washing or cooking), which is highly nutritious but if taken raw, causes severe irritation and inflammation of mucous membrane of mouth.

The significance of the wild poisonous plants for their economic and toxicological value cannot be over rated. The study on the poisonous plants of Ghaziabad indicates their economic, toxicological and therapeutic values. On one hand, these plants may cause serious health problems and sometimes death yet on the other many of them in regulated doses, may act as effective remedies for amelioration of diseases

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References

- Babu, C. R. (1969). Investigation on the Herbaceous Flora of Dehradun with special references to ravines and river beds *Ph.D. Thesis*, Culcutta Univ.: pp. 525-535.
- Babu, C.R. (1977). *Herbaceous Flora of Dehradun*, New Delhi: pp. 80-85.
- Bahndari, M. M. (1978). *Flora of Indian Desert*, (Scientific Publishers, Jodhpur).
- Blatter, E. and W. S. Millard (1954). *Some Beautiful Indian Trees* (2 ex.revised by W.T. Stearn) Bombay: pp. 90-95.
- Bor, N. L. (1947). Common grasses of the United provinces. *Ind. For. Rec.* (N.S. Bot.), **2** : pp. 35-50 (1950). The grasses of Burma, Ceylon, India and Pakistan (Excluding Bambuseae), London. (ed. 2, 1973).
- Brandis, D. (1905). *Tridiar Trees London*, **1** : 313-335.
- Chopra, R. N. S. L. Nayar and I. C. Chopra (1986). *Glossary of Medicinal Plants Including the Supplement*. Council of Scientific and Industrial Research, New Delhi.
- Chopra, R. N., R. L. Badhwar and S. Ghosh (1949). *Poisonous plants of India*. Vol I (ICAR. ewDelhi).
- Caius, J. F. (2003). *The Medicinal and Poisonous Plants of India*, (Scientific Publishers. Jodhpur).
- Clarke, C. B. (1983). Family: Convolvulaceae in Hook f. *Flora of British India*, London, **4** : 70-95.
- Duthie, J. F. (1903-1929). *Flora of the Upper Gangetic Plain and of the Adjacent Siwalik and Sub-Himalayan tracts Calcutta*, **1** : 50-55.
- Haines, H. H. (1922). *The Botany of Bihar and Orissa*. London, **2** : 215-225.
- Hooker, J. D. (1897). *The Flora of British India*, London, **1** : 25-30.
- Jain, S. K. (1991). *Dictionary of Indian Folk Medicine and Ethnobotany*. (Deep Publications, New Delhi).
- Jain, S. K. (1999). *Dictionary of Ethnoveterinary Plants of India*, (Deep Publications. I ewDelhi).
- Jain, Anita, S. S. Katewa and B. L. Choudhary : Additions to the folk herbal veterinary medicines of southern Rajasthan. *J. Econ. Tax. Bor.*, (In Press).
- Jain, Anita, S. S. Katewa, B. L. Choudhary and P. K. Galav (2004). Folk herbal medicines used in birth control and sexual diseases by tribals of southern Rajasthan. *Indian J. Ethnopharmacol.*, **90** (1) : 171-177.
- Jain, Anita, S. S. Katewa and P. K. Galav (2005). Some interesting phytotherapeutic claims by the tribals of southern Rajasthan, India. *Indian J. Traditional Knowledge*, **4** (3) : 291-297.
- Jain, Anita, S. S. Katewa, P. K. Galav and Pallavi Sharma (2005). Medicinal plant diversity from the Sitamata wildlife sanctuary, Chittorgarh district India. *J. Ethnopharmacol.*, **102**(3) : 143-157.
- Joshi, P. (1995). *Ethnobotany of the Primitive Tribes in*

Rajasthan (Printwell. Jaipur).

- Kanjilal, U. N. (1928). *Forest Flora of the Chakrata, Dehradun and Saharanpur Forest Divisions*, U.P. Ed. 3: (revised by B.L. Gupta): pp. 50-65.
- Katewa, S. S. B. L. Choudhary, Anita Jain and H. K. Takhar (2001). Some plants in folk medicine of Rajsamand district (Rajasthan). *Ethnobotany*, **13** : 129-134.
- Katewa, S. S., B. L. Chaudhary Anita Jain and P. K. Galav (2003). Traditional uses of plant biodiversity from Aravallihills of Rajasthan. *Indian J. Traditional Knowledge*, **2 (I)** : 27-39.
- Karewa, S. S., B. L. Chaudhary and Anita Jain (2004). Folk herbal medicines from tribal area of Rajasthan. *J. Ethnopharmacol*, **92** : 41-46.
- Katewa, S. S., Anita Jain, B. L. Chaudhary and P. K. Galav (2006). Some unreported medicinal uses of plants from the tribal area of southern Rajasthan. *Bull. Bot. Surv. India*, Kolkata, **47(1-4)** : 121-130.
- Katewa, S. S. and P. K. Galav (2005). Traditional folk herbal medicines from Shekhawati region of Rajasthan. *Indian J. Traditional Knowledge*, **4(3)** : 237-245.
- Katewa, S. S. and P. K. Galav (2006). Additions to traditional folk herbal medicines from Shekhawati region of Rajasthan. *Indian J. Traditional Knowledge*, **5(4)** : 494-500.
- Maheshwari, J. K. (1963). *The Flora of Delhi*. CSIR-New Delhi 1965, Illustrations to the flora of Delhi, CSIR-New Delhi: pp. 125-130.
- Murty, Y. S. and V. Singh (1961). New Plant record for the Upper Gangetic Plain from Meerut and its neighborhood. *Proc. Nat. Inst. Sci. India*, **27** : 13-17.
- Murty, Y. S. and V. Singh (1966). Some little known plants from the Upper Gangetic Plain. *Sci. And Cult.*, **32** : 597-598.
- Raizada, M. B. (1935). Contribution to Duthie's Flora of the Upper Gangetic Plain from the neighborhood of Dehradun. *J. Ind. Bot. Soc.*, **14** : pp. 155-158. (1950) New or noteworthy plants from the Upper Gangetic plain. *Ind. For. Rec. (N.S.) Botany*, **4** : 24-46.
- Singh, V. and R. P. Pandey (1998). *Ethnobotany of Rajasthan, India*. (Scientific Publishers. Jodhpur).
- Shetty, B. V. and V. Singh (1993). *Flora of Rajasthan*, (Botanical Survey of India Calcutta).
- Vardhana, R. (2006). *Floristic Plants of the World*, New Delhi **2** : 210-225.
- Vardhana, R. (2007). *Flora of District Ghaziabad*, New Delhi: pp. 260-275.
- Vardhana, R. (2008). *Medicinal Plants of the World* in 1-5 Vol. Published by Sarup Book Publishers Pvt.Ltd. Ansari Road Daryaganj. New Delhi-110002.
- Vardhana, R. (2013). *Medicinal & The Economic Plants* in 1-9 Vols, Published by Shree Publishers & Distributors, Ansari Road. Daryaganj. New Delhi – 110002.