Plant Archives Vol. 16 No. 1, 2016 pp. 334-338 *ISSN 0972-5210*

POISONOUS PLANTS OF DELHI

Rashtra Vardhana

Department of Botany, Govt. P. G. College, Sambhal (U.P.), India.

Abstract

Delhi is the metropolitan city of India. It stretches along the bank of the Yamuna River. Presently poisonous Plants of Delhi and those of adjacent to Delhi have been studied. 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 Delhi of Uttar Pradesh 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 ethnobotanical 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, Delhi.

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.

Delhi covers an area of 1497 sq. km. but it is now spread out to some extent. Delhi state comprises of a long narrow strip of territory along the Yamuna River. Which has formed from a part of the Old Delhi district and 65 Trans Yamuna villages (formerly in the Ghaziabad and Meerut districts of Uttar Pradesh). A survey has been conducted in all the areas to collect the information about the poisonous plants growing in Delhi. The state of Delhi lies between latitude 76^0 50'E to 77^0 23'E and longitude 28^0 12'N to 28^0 53'N with an elevation of 213-219 m above the sea level. On the south west of Delhi lies the Thar Desert, to the north lies the lofty Himalaya. In the north east lies the plain area on the Indo-Gangetic divide west of which are the plains of the Indus to the south and in N.E.-S.W. direction is the Aravalli range, the last tail extension of which enters Delhi from Gurgaon. While to the east lies fertile Gangetic plain. Thus Delhi occupies a unique position in the form of a gateway between the Thar Desert, Aravalli range and the Himalayas. The length and breadth are nearly 53 km and 48 km respectively. Delhi is bounded on the north by Karnal on the east by the river Yamuna that separates it from the district of Ghaziabad, Gautam Buddh Nagar and Bulandshahar in the Uttar Pradesh, on the south by Gurgaon and on the west by Rohtak. An extensive survey has been conducted for 4 years (2010-2013) and during the period of study it has been kept in mind that no place should be missed because every place is very useful to collect and record the new plant species.

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

Table 1 :

Plant name	Family	Local name	Use
Abrus precatorius 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.
Alangium salvifolium (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.
Argemone mexicana 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.
Balanites aegyptiaca (L.) Del.	Balanitaceae	Hingot	Fruits are purgative and anthelmintic. Leaf decoction is used for washing hairs to get rid of lices by the tribals, The bark juice is considered poisonous. The other parts are also poisonous. When consumed in the larger quantities.
Butea monosperma (Lam.) Taub.	Papilionaceae	Khankra, Dhak	Crushed seeds are used by the tribals as fish poison
Calotropis procera (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.
Catharanthus pusillus (Murr.) Don	Apocynaceae	Junglibaramasi	Plant is toxic to cattle, causing temporary blindness or madness with rashes all over the body.
Catharanthus roseus (L.) Don	Apocynaceae	Baramasi	Plant juice is poisonous acts as poison to heart.
Cuscuta rejlexa Roxb.	Cuscutaceae	Amarbel	Intake of plant juice causes depression with nausea, vomiting and abortion Tribals mix the plant with folder to kill enemy's
Datura metal 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.
Dioscorea bulbifera 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.
Dioscorea pentaphylla 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.
Euphorbia hirta Linn.	Euphorbiaceae	Euphorbiaceae	Dudhi Extract of plant has sedative effect on the mucous membrane of the respiratory and genitourinary tract. The latex is injurious to eyes
Euphorbia neriifolia 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...

Table 1 continued...

Gloriosa superba Linn.	Liliaceae	Kahihari	Tuber extract mixed with *Solanum virginianum* Linn. root extract is used as abortifacient Intake of tubers is fatal. causes gastrointestinal irritancies, vomiting and purgation.
Holoptelea integrifolia Planch.	Ulmaceae	Banderbati	The crushed stem bark is used as fish poison.
Jatropha curcas Linn	Euphorbiaceae	Ratanjotj Anglibadam, 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.
Jatropha gossypifolia Linn.	Euphorbiaceae	Ratanjotj Anglibadam	Leaves and seeds are purgative and poisonous. If grazed by animals, causes severe vomiting and death.
Lantana camara Linn.	Verbenaceae	Ghaneri	Grazing of cattle causes severe injury to liver, profuse salivation, copious lachrymation. loss of appetite and ultimately death of the cattle.
Melia azedarach 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.
Moringa oleifera lam.	Moringaceae	Sainjna	The extract of the root bark causes severe skin inflammation and skin dermatitis. Root and stern bark are used as abortifacient.
Mucuna pruiens (Linn.) DC.	Fabaceae	Kamach	Pod hairs when come in contact with skin produce itching & irritation and sometimes cause blister and dermatitis.
Nerium indicum Mill	Apocynaceae	Lalkaner	Root is poisonous; used for criminal and suicidal purposes; seeds are used to poison and kill enemy's livestock.
Parthenium hysterophorus 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.
Ricinus communis 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.
Solanum virginianum 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
Urginea indica (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

on the vegetation of Delhi and traditional uses of plants but no work has been done specifically on poisonous plants of Delhi". The Tribals and other people found in District Delhi such as Nut, Gujjar, Balmik, Schedule Caste, Schedule Tribs, 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. 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 Delhi during 2010-13. 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 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 salvifolium* (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 Delhi 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.

Acknowledgement

Authors are thankful to those persons whose guidance and contacts were necessary to do this task as e.g. the village headmen, Priest, Medicine men, men and women working in the field, Old and experienced persons more than 60 years old other tribals of the locality, also the local informants and other community leaders were present at that time.

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 oJIndian Desert*, (Scientific Publishers, Jodhpur).

Blatter, E. and W. S. Millard (1954). *Some Beautiful Indian Trees*. (2 ex.revised by W.T. Steam) 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 ojIndia*. Vol. **I** (lCAR. ewDelhi).

Chopra, R. N., R. L. Badhwar and S. Ghosh (1949). *Poisonous plants ojIndia*. Vol. **I** (lCAR. ewDelhi).

Chopra, R. N., R. L. Badhwar and S. Ghosh (1949). *Poisonous plants ojIndia*. Vol. **I** (lCAR. New Delhi).

Caius, J. F. (2003). The *Medicinal and Poisonous Plants of India* (Scientific Publishers. Jodhpur).

Clarke, C. B. (1983). *Family Convulvulaceae 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 ojEthnoveterinaryPants 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 tribalsof southern Rajasthan. *Indian J Ethnopharmacol,* **90 (I)** : 171-177.

Jain, Anita, S. S. Katewa and P. K. Galav (2005). Some interestir.gphytotherapeuticclaims by the tribalsof 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). *Ethnobotanyojthe 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. K. 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 SurvIndia,* Kolkata, **47(1-4)** : 121-130.

Katewa, S. S. and P. K. Galav (2005). Traditional folk herbal medicines from Shekhawatiregion of Rajasthan. *Indian J. Traditional Knowledge,* **4(3)** : 237-245.

Katewa, S. S. and P. K. (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, IIIustrations 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). *Ethnobotanyof Rajasthan, India.* (Scientific Publishers. Jodhpur).

Shetty, B. V. and V. Singh (1993). *Flora ojRajasthan* (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.