TREATMENT OF HAEMATURIA IN CATTLE USING TRADITIONAL MEDICINAL PLANTS BY THE TRIBALS OF POONCH DISTRICT OF JAMMU AND KASHMIR

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Abstract: From time immemorial, ethno-veterinary and herbal practices have been in vogue to treat various ailments and diseases. This is because of the fact that they are accessible, easy to prepare and administer, with little cost involved. In Atharvaveda, turmeric and yellow birds are mentioned in which jaundice is charmed to enter, leaving the human patient. These small beginnings have guided man to ultimately develop the present complex system of the healing science in the service of health, that finds its appropriateness in the context of cattle health too. Even though the modern developments in therapeutic field have brought about a rapid decline in traditional medicinal practices, yet the plant-based remedies are still having a crucial role as potential source of therapeutic aids in ethnoveterinary sector all over the world. The present study conducted between June 2016 to June 2018 revealed that the inhabitants especially the tribals and rural people of Poonch district use 12 plant species namely Gerbera gossypina, Rumex hastatus, Mirabilis jalapa, Rumex nepalensis, Verbena officinalis, Oenothera rosea, Polygonatum verticillatum, Prunus armeniaca, Curcuma domestica, Serratula pallida, Solanum nigrum and Solena amplexicaulis to cure haematuria in cattle. The study was conducted using semi-structured questionnaire aimed at different age groups. It was observed that these tribal and rural people have immense indigenous knowledge regarding usage of these plants for the treatment of this ailment. They have been using these plants in an uncontrolled and unabated manner. This over-exploitation may endanger the very existence of these plants. The present article deals with detailed account of these plants which might be used for the development of innovative, cheap, effective, and eco-friendly herbal formulations to treat haematuria without any observed side effects as per the preliminary data provided by the informants.

Key Words - Haematuria, Ethnoveterinary, Poonch district, Tribals, Traditional healers.

I. INTRODUCTION

Haematuria is a widespread condition and has been reported by many workers from all corners of the world (Joshi H.C. et al., 2002). It has been treated by using different parts of many plants by the traditional medical practitioners (Hakeems). Thus, these ethnotropical plants have immense potential for obtaining drugs that can be used against this disease. Therefore, a proper selection of important plant species is a prerequisite to begin ethno-pharmacological, phytotoxicological studies because of huge laboratory costs (Canalesa et al., 2005). It is necessary to determine the species that are most used to treat a specific illness. One of the most important tools in this regard is to find a particular species (Fré et al., 1998; Heinrich et al., 1998). This principle forms the basis of the study to document those plants which are used by the people of Poonch district and to evaluate their potential for manufacture of new drugs to treat haematuria in cattle. The present paper highlights detailed deliberation about the plants and plant material which are used as medicine against this disease by the local people living Poonch area.

The present study area is Poonch district of Jammu and Kashmir state, India. The documentation of medicinal usages of plants has long been started in Jammu & Kashmir and over 300 medicinal plants were documented by Kaul (Kaul, 1997). A number of reports on the Amchi system of medicine in Ladakh, the northern part of Jammu and Kashmir, wherein the herbs used by the local medicine practitioners (Amchis) have appeared in the past (Raghunathan, 1976; Dhar, 1980; Srivastava et al., 1984; Nawchoo and Buth, 1989; Kaul et al., 1995). However, haematuria in cattle of Jammu and Kashmir is least reported and available literature is scanty.

II. MATERIALS AND METHODS

1. Study Area:

The study area, that is, Poonch is a hilly district of Jammu and Kashmir state at an altitude ranging between 600 m to 4, 750 m above mean sea level. The area of the district lies between 330°25′ to 340°1′ north latitude and 73°58′ to 74°35′ east longitude and measures 1, 674 Sq km. It is flanked by the gigantic Hajipur and Pirpanjal ranges in the north and east, by Shiwalik hills in the south and on the west by Toujipir, a mountain ridge that connects Poonch with area under Pakistan occupation.

The district was named as one of the country’s 250 most backward districts (Ministry of Panchayati Raj, 2006). With a population a population of 476, 820 (2011 census), the area is populated by ethnic communities like Gujjars, Bakerwals, Paharis, Kashmiris and Rajputs.

Climatically it is subtropical to temperate region with average annual rainfall ranging from 1,635 to 1,796 mm. The average temperature on the southern slopes of Pirpanjal range in July is around 9°C which drops to about -8°C in winter (Mani, 1978). This climatic variability offers the possibility of thriving of a wide range of medicinal plants in the area which include herbs, shrubs...
and a few climbers which are collected and used by the tribal people for the treatment of various ailments. The drastic environmental conditions and hilly topography have led to the prevalence of traditional system of medicine as a matter of a necessity for these people, especially for the nomads and tribals living at higher reaches of the hilly areas. The present paper is a part a study conducted to obtain the record of medicinal plants used to cure different diseases by the people of this district.

2. Data Collection:

The study area was visited periodically between March and November during year of 2017 and between March to August 2018. Semi-structured interviews and questionnaire were conducted with people. As many as 134 people have been interviewed and information regarding use of plants for various ethnomedicinal purposes, parts used, modes of preparation and administration of medicine have been collected. During these interviews, it emerged out that the people have been using 12 plant species to treat haematuria in cattle.

III. OBSERVATIONS AND RESULTS

A total of 12 plant species were found to be used by the people to treat haematuria in cattle. The details of these plants such as description, flowering and fruiting seasons, whether cultivated or found in wild, area from where these were collected, their usage in terms of part and quantity etc. are given below and the corresponding photographs are given in the form of a plate in PLATE-I.

1. Curcuma domestica Valet. (Local name: Haldi)
   Family: Zingiberaceae
   The plant is an erect, rhizomatous herb, 6-50 cm tall; leaves large, elliptic-oval, 30-35 cm long and 15-20 cm wide; flowers yellow, corolla tube funnel shaped, capsule globose, finely 3 valved; seeds ovoid, small (Fig. 1).
   Flowering and Fruiting: April – June. It is cultivated. Collected from Sakhi Maidan.
   Usage: About 250-300 gm paste of fresh rhizome is mixed in butter and given twice a day.

2. Gerbera gossypina Royle. (Local name: Kough)
   Family: Asteraceae
   The plant is a perennial, erect herb, with creeping subterranean, rhizomatous base; leaves radical, obovate
   lanceolate, subcordate, white wooly outside. Ligulate florets white or tinged with purple or pink, female 2 lipped; disc florets bisexual, tubular, white, 2 lobed; achenes 5-6 mm long and rough. Pappus whitish, flattened, barbellate, in 2 rows (Fig. 2).
   Flowering and Fruiting: March - May
   Found in shady places and rocky slopes to 2500 m. Collected from Sanai.
   Usage: About 150-200 gm paste of whole plant is given twice a day to the ailing animal.

3. Mirabilis jallapa Linn. (Local name: Alta)
   Family: Nyctaginaceae
   The plant is an erect, branched herb with pink purple stem, thickened at nodes; leaves opposite, ovate to lanceolate, subcordate, base acute or acuminate; flowers pink, bracts sepal like; stamens 5; seeds dark brown to black (Fig. 3).
   Flowering & Fruiting: August - December
   Found along roadsides and waste places. Collected from Balnoi.
   Usage: About 1-2 kg of root or root paste is given to the cattle orally twice a day.

4. Oenothera rosea Linn. (Local name: Banmarch)
   Family: Onagraceae
   The plant is an annual, erect or suberect, annual to perennial herbs; leaves sessile, linear-lanceolate, glaucous beneath, tips acute or circinate; stem angled or grooved; flowers white or yellowish-green, arranged in terminal peduncles; perianth oblong, 6 parted; berries globose and red when mature (Fig. 4).
   Flowering and Fruiting: March - September; Fruiting: October - November
   Common in waste places and along the grassy slopes. Collected from Ramkund.
   Usage: About 150-250 gm of whole plant is grinded and paste is given orally to the animals 2-3 times a day.

5. Polygonatum verticillatum Linn. (Local name: Shirkankal, Shakal misri).
   Family: Liliaceae
   The plant is an erect or suberect, annual to perennial herbs; leaves sessile, linear-lanceolate, glaucous beneath, tips acute or circinate; stem angled or grooved; flowers white or yellowish-green, arranged in terminal peduncles; perianth oblong, 6 parted; berries globose and red when mature (Fig. 5).
   Flowering and Fruiting: June - September
   Rare, found in moist and shaded places alongwith forest of Cedrus deodara at 2200-3000 m. Collected from Sulha dhok.
   Usage: About 200-500 gm fresh root is given orally to cows and buffaloes whereas about 50-100 gm is given to sheep and goats.

6. Prunus armeniaca Linn. (Local name: Ary)
Family: Rosaceae
The plant is wild or cultivated tree, bark dark brown, in woody pieces; leaves ovate or elliptic, crenate, apex acute, petioles flexible and glandular; flowers white, tinged with pink young leaves; calyx 5 lobed; petals 5; drupes pale yellow, ovoid, solitary, app glabrous sweet, stone smooth, seed ellipsoid. (Fig. 6).
Flowering: March- April; Fruiting: April - June
Commonly found either wild or cultivated. Collected from Barachhad.
Usage: The fruits are dried, soaked in water and infusion is given orally.

7. Rumex hastatus D. Don. (Local name: Khatimal)
Family: Polygonaceae
The plant is a perennial, erect, glabrous herb or undershrub, stem pale grey and much branched; leaves narrowly triangular or hastate, fleshy; glaucous; flowers polygamous, pink to some extent ; nuts trigonous (Fig. 7).
Flowering: February - June; Fruiting: June - October
Commonly found in terraces of field and grass fields. Collected from Pothha.
Usage: The leaves of the plant are given as fodder to the animals.

8. Rumex nepalensis Sprengel. (Local name: Hula)
Family: Polygonaceae
The plant is perennial, erect, robust and branched herbs, reaching upto 1 m, stem hollow, ribbed, rootstock thick; radical leaves long and petioled, ovate- oblong, acute or obtuse, base widely or narrowly cordate; cauline leaves smaller, sessile, stem sheathing; flowers bisexual, arranged in leafless long panicles; perianth 6, pale green; stamens 6; ovary acutely 3 angled; nuts enclosed in the inner tepal segments (Fig. 8)
Flowering and Fruiting: April – June.
Commonly Found in open localities and grassy slopes. Collected from Chandimarh.
Usage: About 150-200 gm of root is given twice a day.

9. Serratula pallida DC. (Local name: Manja patter, Manja koochna)
Family: Asteraceae
The plant is a robust, glabrous or scabrulous herb; stem branched; leaves lobed, lobes entire or toothed; petioles variable. Heads solitary, terminal; florets purplish (Fig. 9).
Flowering and Fruiting: April – August.
Commonly found in waste places. Collected from Manjherhi.
Usage: The paste of leaves is given orally to the animals.

10. Solanum nigrum Linn. (Local name: Kachmach).
Family: Solanaceae
The plant is in annual, perennial, 15-60 cm high herb; leaves ovate or ovate-lancelate, entire ; flowers white, in axillary cymes; berry 4-5 mm diam (Fig. 10).
Flowering & Fruiting: Throughout the year.
Commonly found in waste places along roadsides. Collected from Uchhad.
Usage: The whole plant is grinded into paste and is given along with butter on urinary tract infection.

11. Solena amplexicaulis (Lam.) Ghandhi (Local name: Khakri)
Family: Cucurbitaceae
The plant is a perennial, climbing herbs, tendrils 2-fid; leaves variable in shape and size, more or less 3-lobed or deeply 5 lobed, to sagitate, at base; flowers pale-white; male flowers in subumbel racemes; female flowers Solitary or in pairs; fruits ovoid, narrow at both ends, green or bright red on ripening; seeds many, ovoid, white, embedded in red pulp (Fig. 11).
Flowering: June - July; Fruiting: August - October
Commonly found climbing on shrubs and medium sized trees. Collected from Gohlad.
Usage: The whole plant is given orally.

12. Verbena officinalis Linn. (Local name: Asmani booti).
Family: Verbenaceae
The plant is an erect, perennial, decumbent herbs; leaves rugose, spreading, narrowed to the base, the lower pinnatifid, and/or coarsely toothed, upper sessile and usually 3 partite; flowers lilac; drupes bluish-violet, subcylindric, smooth (Fig.12).
Flowering and Fruiting: Almost throughout the year.
Found in waste places and moist and shady localities. Collected from Sarhooti.
Usage: The paste of whole plant is given orally to the animals.
IV. PLATE-I
Photographs of the plants (Fig. 1 to Fig. 12)
V. DISCUSSION

Haematuria is a condition in which although animals have normal temperature, pulse and respiration but they show a progressive weight loss (Rajendran et al., 1979). The main symptom of this disease is light to dark red colour of urine. It was observed that bovine haematuria runs a chronic course and no febrile reaction and anorexia were observed (Nandi 1969). However, the affected animals show symptoms of anemia and cachexia. When microscopic examination of urine sample was conducted, it was confirmed that the animal was suffering from haematuria since urine contained intact red blood cells. Teotia et al., (1973) during their studies on haematuric cattle also found the presence of RBCs, few pus cells, epithelial cells, casts and crystals in the urine samples of the affected animals. The pH of urine of these animals was found to be slightly alkaline. In absence of effective treatment for the disease, traditional methods of treatment such as different plants and their parts had been tried for the management of the disease over years in different parts of the world. Supportive therapy in the form of the use of Vitamin B supplement along with Iron preparation and mineral mixture was recommended by Dash (1980). Bhandare, S. G. (2009) reported case study of chronic haematuria of a six year old Jaisalmeri camel of Camel Contingent, Republic Day Parade belonging to 36 Battalion of BSF, Bikaner. He reported the use of medicines of plant origin along with some allopathic medicines for successful treatment of the animal at Veterinary Dispensary of the Contingent, Bikaner, Rajasthan. Therefore, scrutiny of these plants for a drug substitute of plant origin with no side effects would have far reaching impact in veterinary healthcare in future.

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VII. REFERENCES: