Ethnoveterinary Practices in Uttarakhand Himalayas: Survey of Medicinal Plants for Gastrointestinal disorders

[1]Lalit Tiwari, [1]Nitin Rai, [2]Rajeev Kr. Sharma and [3]P. C. Pande

[1]Homoeopathic Pharmacopoeia Laboratory, Kamla Nehru Nagar, Ghaziabad-201002, U.P.

[2]Pharmacopoeial Laboratory for Indian Medicine, Kamla Nehru Nagar, Ghaziabad-201002, U.P.

[3]Department of Botany, S.S.J. Campus, Kumaun University, Almora-263601 (Uttarakhand)

Abstract

An extensive field survey of age-old veterinary practices of the Uttarakhand Himalayas, which is inhabited by hill communities and ethnic groups, was made during 2005-2008 along with detailed screening of available secondary data. In the study, the main emphasis was given to documentation of folk-lore veterinary knowledge for the treatment of gastrointestinal diseases. A total of 32 plants were recorded with their veterinary folk uses from the area investigated.

Key words: Ethnoveterinary medicines, Gastrointestinal diseases, Uttarakhand Himalayas.

Introduction

The Uttarakhand state which came into existence on November 9, 2000 as the 27th state of India is bounded by China (Tibet) on the north, Nepal on the east, Uttar Pradesh on the south and Himanchal Pradesh on the north-western boundary and lies between 28° 53' 24" and 31° 27' 50" N latitude and between 77° 34' 27" and 81° 02' 22" E longitudes (Fig.1). The state embodying the Kumaon and Garhwal Himalayas with a geographical area of about 53, 483 sq. km. with 13 districts viz. Almora, Bageshwar, Chamoli, Chapawat, Dehara Dun, Haridwar, Nainital, Pauri, Pithoragarh, Rudrapryag, Tehari, Udham Singh Nagar and Uttarkashi. The state is divisible into four major geologic formations viz. (i) Siwalic Himalaya (ii) Lesser Himalaya (iii) Greater Himalaya and (iv) Trans-Himalaya. From folk-cultural point of view, the state exhibits great ethnic and cultural diversity. Garhwalies and Kumaonies are the principal community of the state. Besides this, the Bhotias, the Rajis, the Tharus, the Bhoxas and the Jaunsaries are the important tribal communities inhibit the state. In Uttarakhand Himalaya, livestock occupies a very important place in human life. It is an integral part of agriculture-based economy of Uttarakhand. More than 70% of the rural population of Uttarakhand Himalaya depends upon animals for their economical needs. In this region, every land-cultivating house, attempts to maintain a pair of bullocks for ploughing purpose, a cow and a buffalo for milk and calves for replacement of bullocks. In remote and higher altitude regions, the peoples are also maintaining sheep for wool and horses/mules for transport purpose (Tiwari & Pande, 2011). Diseases are basic problems for both the human being and animals. Ethnic groups and villagers of Uttarakhand Himalaya totally depends on natural resources like plant, plant products, animal products, minerals, soils, etc which are available in their surroundings

[1]* Author for correspondence

for the treatments of diseases and disorders of their cattle. Gastrointestinal diseases like stomachache, dysentery, diarrhea, tympany, indigestion and constipation are very common and day to day problems in cattle. Present communication deals with the 32 plants which are used by the locals for the treatment of gastro-intestinal diseases in the study area (Fig. 1).

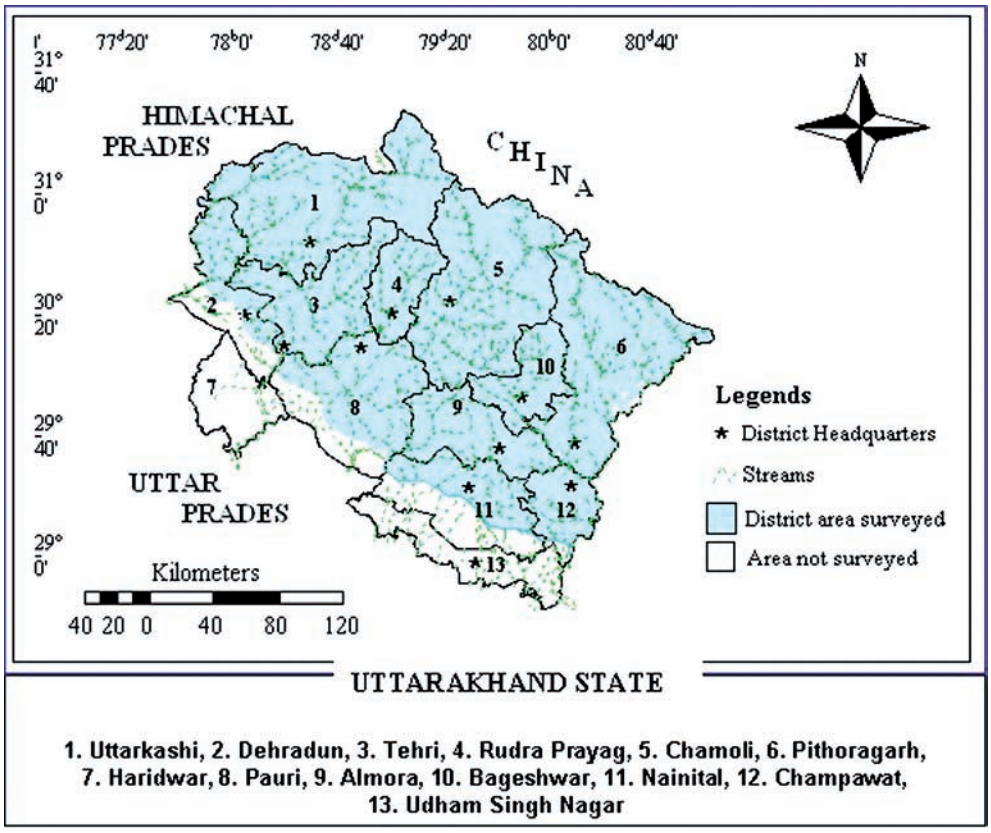

Fig. 1: Study Area

Material and Methods

Remote areas of Uttarakhand Himalaya were surveyed during the years 2005-2008 and ethno-veterinary information related to gastrointestinal diseases were collected through interviewing the local medicimen and experienced people. The information were further verified by cross checking with other knowledgeable person of the study area. Detailed available secondary data (Gaur *et al*., 1992, Samal *et al*., 2002, 2003, Tiwari and Pande, 2004, 2005, 2006, 2006a, b, 2009, 2010, 2011; Bisht *et al*., 2004, Pande *et al*., 2006, Shah *et al*., 2007; Tiwari *et al*., 2007 ; Pande *et al*., 2007; Shah *et al*., 2008; Tiwari *et al*., 2011, Agnihotri *et al*., 2012) related to veterinary practices were also screened. Voucher plant specimens were identified with the help of floras and deposited in the herbarium of Botany Department, Kumaon University,

S.S.J Campus, Almora. The ethno-veterinary medicinal data are presented alphabetically by scientific names of plants (Table 1).

Table 1: Medicinal species used for Gastrointestinal diseases in Uttarakhand Himalayas

S. No.	Plant species	Family	Vernacular Name	Plant Parts	Diseases and disorders
1.	*Acacia catechu* (L.f.) Willd.	Mimosaceae	Khair	Stem	Dysentery, diarrhoea
2.	Aconitum heterophyllum Wall. ex Royle	Ranunculaceae	Atis	Root	Stomachache, dysentery, diarrhoea
3.	*Allium cepa* L.	Alliaceae	Piyaj	Bulb	Dysentery, diarrhoea, constipation, indigestion,
4.	*Amaranthus caudatus* L.	Amaranthaceae	Marsha	Leaf	Dysentery
5.	*Arisaema intermedium* Blume	Araceae		Tuber	Dysentery
6.	*Artemisia elegantissima* Pamp.	Asteraceae	Pati	Leaf	Diarrhoea, dysentery
7.	*Atylosia scarabaeoides* (L.) Benth.	Fabaceae		Leaf	Diarrhoea, dysentery
8.	*Betula utilis* D. Don	Betulaceae	Bhoojpatra	Gum	Dysentery
9.	*Brassica campestris* L.	Brassicaceae	Sarson	Oil	Dysentery, constipation, tympany, stomachache, indigestion
10.	*Cannabis sativa* L.	Cannabaceae	Bhang	Resin	Stomachache, dysentery, indigestion
11.	*Carum carvi* L.	Apiaceae	Kalajeera	Seed	Digestive troubles, dehydration, gastric troubles

S. No.	Plant species	Family	Vernacular Name	Plant Parts	Diseases and disorders
12.	*Coriandrum sativum* L.	Apiaceae	Dhanyiya	Whole plant	Dehydration, dysentery, diarrhoea, constipation, indigestion, tympany
13.	*Elettaria cardamomum* (L.) Maton.	Zingiberaceae	Elaichi	Seed	Dysentery, diarrhoea
14.	*Eleusine coracana* (L.) Gaertn.	Poaceae	Mandua	Seed	Dysentery
15.	Foeniculum vulgare Mill.	Apiaceae	Sanuf	Seed	Diarrhoea, dysentery stomachache, indigestion
16.	*Glycine max* (L.) Merr.	Fabaceae	Bhatt	Seed	Dysentery, diarrhea, tympany, flatulence, indigestion
17.	*Grewia optiva* J.R. Dumm. ex Burrett	Tiliaceae	Bhimal	Leaf	Indigestion, constipation, dysentery, diarrhoea
18.	*Hordeum vulgare* L.	Poaceae	Jau	Seed	Dysentery
19.	*Linum usitatissimum* L.	Linaceae	Alasi	Seed	Dysentery
20.	*Mentha arvensis* L.	Lamiaceae	Paudina	Leaf	Tympany, constipation, dysentery, diarrhoea
21.	*Mentha piperita* L.	Lamiaceae	Podina	Leaf	Dryness, dysentery
22.	*Myrsine semiserrata* Wall.	Myrsinaceae	Gaunta	Gum	Diarrhoea, dysentery
23.	*Origanum vulgare* L.	Lamiaceae	Bantulsi	Whole plant	Diarrhoea, dysentery

S. No.	Plant species	Family	Vernacular Name	Plant Parts	Diseases and disorders
24.	*Picrorhiza kurrooa* Royle ex Benth.	Scrophulariaceae	Kutki	Root	Digestive troubles, dysentery, diarrhoea
25.	*Piper nigrum* L.	Piperaceae	Kalimircha	Fruit	Constipation, diarrhoea
26.	*Raphanus sativus* L.	Brassicaceae	Mooli	Root	Tympany, dysentery, diarrhoea
27.	*Rheum australe* D.Don	Polygonaceae	Dolu	Root	Indigestion, dysentery, constipation
28.	*Ricinus communis* L.	Euphorbiaceae	Arandi	Root	Constipation, dysentery
29.	*Rumex nepalensis* Spreng.	Polygonaceae	Jangli-palak	Root	Diarrhoea, dysentery
30.	Sesamum orientale L.	Pedaliaceae	Til	Seed	Constipation, dysentery, tympany, flatulence
31.	*Trachyspermum ammi* (L.) Sprague	Apiaceae	Ajwain	Seed	Diarrhoea, dysentery, indigestion, gastric troubles, mouth blisters, tympany, stomachic, constipation
32.	*Zingiber officinale* Rosc.	Zingiberaceae	Adrak	Rhizome	Indigestion, constipation, dysentery, diarrhoea, stomachache, tympany, stomachic

Conclusion

The study reveals that presently the people of Uttarakhand Himalayas have been using 32 plants species for the treatment of gastro-intestinal diseases

among their animals. The methods of treatments are totally traditional and come from their ancestors through the word of mouth. Diarrhoea, dysentery, indigestion and constipation are the common gastro-intestinal diseases of cattle in the study area. Out of 32 plant species, the study reveals that 16 are common edible species viz., *Allium cepa* L., *Amaranthus caudatus* L., *Brassica campestris* L., *Carum carvi* L., *Coriandrum sativum* L., *Elettaria cardamomum* (L.) Maton., *Eleusine coracana* (L.) Gaertn., *Foeniculum vulgare* Mill., *Glycine max* (L.) Merr., *Hordeum vulgare* L., *Mentha piperita* L., *Piper nigrum* L., *Raphanus sativus* L., *Sesamum orientale* L., *Trachyspermum ammi* (L.) Sprague and *Zingiber officinale* Rosc. However, this important veterinary knowledge is in danger of extinction due to rapid modernization. This information has survived only by being passed from one generation to next so far. Now-a-days young generation does not take the interest in (local) animal husbandry practices. Hence there is a need to document this knowledge before it is lost forever. Detailed chemical and pharmacological investigations of these folk plants are suggested for developing the new veterinary formulations and drugs for curing gastrointestinal diseases.

Medicinal plants used for gastrointestinal disorders in Uttarakhand Himalayas

Fig. 1: *Aconitum heterophyllum* Wall. ex Royle

Fig. 2: *Betula utilis* D. Don

Fig. 3: *Cannabis sativa* L.

Fig. 4: *Carum carvi* L.

Fig. 5: *Foeniculum vulgare* Mill

Fig. 6: *Grewia optiva* J.R. Dumm. ex Burrett

Fig. 7: *Picrorhiza kurrooa* Royle ex Benth

Fig. 8: *Rumex nepalensis* Spreng

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