



Study of medicinal plants on ethno veterinary practices in Karsog Block district Mandi (H.P), North West Himalaya

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Abstract

Medicinal plants are used by local inhabitant to cure the various diseases in livestock's, who cannot afford the allopathic drugs for the minor health problems of livestock. The present study is carried out for the documentation of ethno veterinary medicinal plants used by farmers, shepherds, and other local people of six Gram panchayats. These panchayats are Sarahan, Tebban, Gwalpur, Nanj, Tuman and Mahog. A total 49 species of ethno veterinary medicinal plants belonging to 32 families and 46 genera were documented during the period from March-2019 to August -2020 with the help of local herbal practitioners and knowledgeable tribal peoples of the vicinity. Out of total 49 Plant species, 32 are herbs, 13 are trees, 4 are shrubs. The ethno veterinary medicinal plants were widely used by local inhabitants to cure animals from several diseases such as diarrhoea, dysentery, digestive disorder, injury, wound healing, fever, skin disease, urinary problems, cough and cold, muscular disorder, inflammation, scorpion, snake, insect bites, weakness, parasites, ulcer and bleeding. The present study focussed on the ethno medicinal plants to cure various diseases of the animals to provide scientific names of the plants, family, vernacular name, and part of plant used.

Keywords: ethno veterinary, medicinal plant, livestock, traditional knowledge, Karsog block, Mandi, Himachal Pradesh

Introduction

Human beings are directly or indirectly depended upon the plants to fulfil their regular needs in daily life, are utilizing the traditional knowledge of medicinal plants to diagnose the various diseases in livestock's. Due to modern veterinary medicinal practices, the ethno veterinary knowledge is decreasing day by day. Ethno veterinary medicine (EVM) is define as dealing with the folk belief, skills, indigenous knowledge, practices and method used in animal healthcare ^[1]. Some incurable diseases of animals are treated by using the traditional methods or by making remedies of herbal product like root, stem, shoot, seed, fruits, leaves, bark, flowers, resins, latex etc. In few villages this type of ethno veterinary prescriptions, practices are surviving through one generation to next generation through mouth of words. Livestock's are the important part of our lives and agriculture system which provides us milk, meat, rural transport, fertilizer, and other various products. They play an important role in economy by generating the revenue and employment to the people of rural and urban area. In ancient time the medicinal plants are used for the treatment of humans and animals. Ayurveda and its 08 divisions, Rig-Veda, and Athrava Veda are the most primitive documents of the world which provide the information and knowledge of medicinal properties of the plants and detailed perception for disease prevention and treatment of human and animal diseases ^[2]. Due to lack of a

written document of this type of traditional knowledge, people of the rural areas are not getting full benefits from this ancient heritage of knowledge. The study on ethno veterinary medicinal plants and their uses by local inhibitors of Karsog block of Mandi district Himachal Pradesh North western Himalaya is not documented yet by any researcher.

Description of Study Area

Mandi district is the one of the central districts of Himachal Pradesh was known as 'Mandavya Nagar'. The head quarter of the Mandi district is Mandi town. This town is also known as 'Chota Kashi' as there are many ancient temples. This town is situated on the bank of river Beas. It lies between 31°13" to 32°04' N and 76°37' to 77°04' E in the middle of Himachal Pradesh. The total geographical area of Mandi district is 3959.604 Km². Karsog Block of Mandi districts is a beautiful valley which is located in the lap of Himalayas, lies between 31.3835°N and 77.2028°E. It is situated in Pir Panjal range of Himalayas having borders with Kullu and Shimla Districts.

The topography of the area of Karsog Block is Moderate to steep having slope of 15-16%. Karsog is an administrative unit of 430 Villages. The total geographical area of this block is 524km². The present study was carried out in 46 villages of 6 Gram Panchyats *i.e.* Sarahan, Tebban, Gwalpur, Nanj, Tuman, Mahog of Karsog block, located in the altitude range of 500m to 2400m asl.

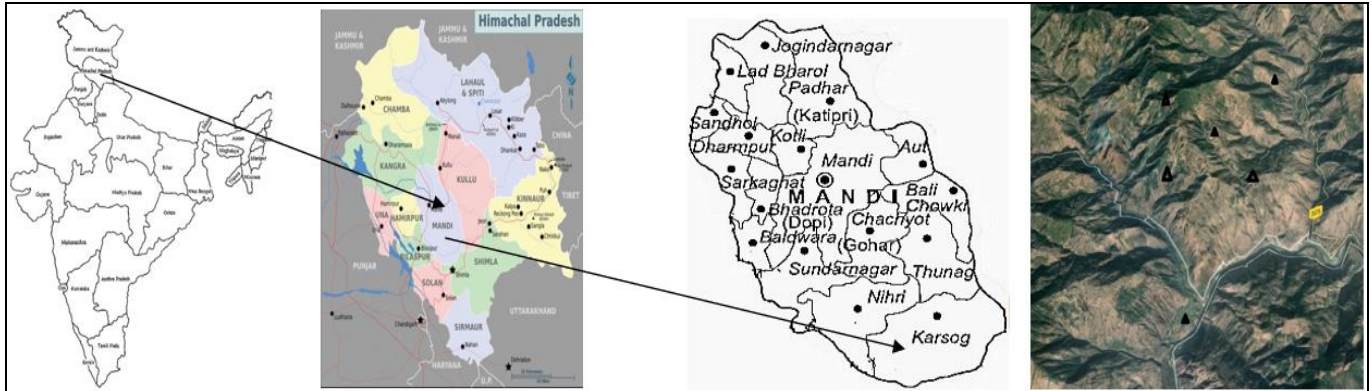


Fig 1: Map of India, Map of Himachal Pradesh, Map of Mandi district, Sattelite image of the study area

Methodology

Intensive and extensive field survey was carried out from March-2019 to August-2020 in the Karsog block of Mandi district in various villages to explore the ethno veterinary medicinal knowledge of the plants and to collect the information on the indigenous uses of medicinal plants, composition of various medicines, is gathered from different type questionnaires prepared from local as well as tribal inhabitants. Frequent interviews were conducted with local people, elderly folk, Vaidyas and Hakims, Shepherds, Veterinary practitioners, Traditional herbal healer, Pashu Vaidya etc. Few selected field sites were visited along with local Vaidyas and shepherds in various villages like Malog, Sarahan, Nanj, Tundan, Tebban, Chalah, Sarandi, Paloh, Khara, Tuman, Gwalpur, Tharmi, Mahog, Navidhar, Shushan, Koti, Ashla, Fanweta, Chekhwa, Chaberi, Satvi Dhar, Mungar, Banoa, Rashog, Porla, Shala, Jaiee, Shanog, Khamnu etc. These information were gathered from the local inhabitants of selected study area and the collected information's were analysed and complied with the help of available literature and floras i.e. Floras of Simlensis by Collett (1920-1921) [3, 4], Flora of Busshar Himalayas by Nair (1977) [5], Flora of Himachal Pradesh by Chaudhery and Wadhawa (1984) [6], Ethno-medicinal plants of Mandi, Himachal Pradesh by Gaur R. D. Singh & P. B. (1995) [7], Ethnobotanical study of useful plants of Kullu district in North Western Himalaya by Singh S. K. (1999) [8], Flora of

Kullu District Himachal Pradesh by Dhaliwal and Sharma (1999) [9], Medicinal and aromatic plants of Himachal Pradesh by Chauhan N. S (1999) [10], Flora of Sirmaur by Kaur and Sharma (2004) [11], Flora of Lahul Sapiti by Aswal and Mehrotra (2009) [12], and Indigenous traditional knowledge recorded on some Medicinal plants of Narendra Nagar Block (Tehri Garhwal), Uttrakhand. By Dangwal L.R. and Sharma A. (2011) [13].

Result and Discussion

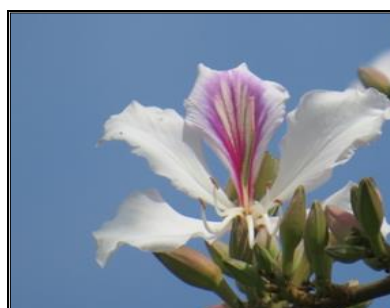
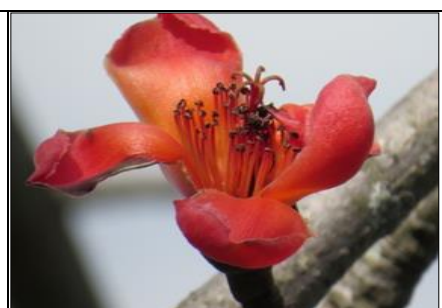
In the present study, a total of 49 ethno veterinary medicinal plants species are documented, which belong to 46 genera and 32 family, out of which 32 are herbs, 13 are trees, 4 are shrubs. The usage pattern of ethno veterinary medicinal plants species shows that the extract of leaves (40.81%) were used for treatment of different ailments followed by seed (20.40%), stem 14.28%, fruit 14.28%, root 10.20%, whole plant 12.24%, bark 10.20%, rhizome 6.12%, grains 4.08%, flowers 4.085, bulb 2.04% and resin/oil 2.04%. The medicinal plant species are used for the treatment of 40 types of diseases found in various types of livestock's i.e. Sheep, Goat, Cow, Buffalo, Horse, Mule, Dog, Cat, Oxen etc. All these medicinal plant species used in ethno veterinary practices by local communities are collected from the neighbouring areas of the study site. (Table no.1)

Table 1: Detail of animal diseases and List of medicinal plant species used in ethno veterinary practices in Karsog block Mandi district Himachal Pradesh.

S.No.	Botanical name	Common name	Local name	Family	Part used	Diseases/Ailments	Indigenous uses and traditional practices.
1	<i>Achyranthes aspera</i> Linn.	Agahada	Lathjeera	Amaranthaceae	Leaf and whole plant	Eye disorder And fever, injuries, Bites	The leaf paste is prepared and applied over the bites, cuts, and injuries with the help of a bandage for few days'. The paste of fresh root are applied to cure the bone fractures.
2	<i>Allium cepa</i> Linn.	Pyaz	Doonu	Liliaceae	Bulb and leaves	Removal of ectoparasites	Well grinded bulb of onion is mixed with mustered oil and 25g of leaf ash of <i>Musa paradisiaca</i> mixture is applied externally on the skin for removal of ectoparasites.
3	<i>Allium sativum</i> Linn.	Lahsun	Lahasan	Amaryllidaceae	Leaves	Snake bite	Leaves juices of <i>Allium sativum</i> and <i>Azadirachta indica</i> is given to drink to cure snake bite.
4	<i>Amaranthus viridis</i> Linn.	Jungli Chulai	Chulai	Amaranthaceae	Leaves	Skin infection, cold	A dried leaf power is mixed with hot water is given orally to treat skin infection, cold and is also used as a tonic.
5	<i>Argemone mexicana</i> Linn.	Bharbhandn	Piinli Dahtura	Papaveraceae	Leaf and Fruit	Foot infection and Rheumatism	100gm of fruit and leaf extracted is applied over the infected foot. Same mixture is also applied externally over body part of cattle for relief from rheumatism.
6	<i>Artemisia indica</i> Willd.	Indian wormwood	Drubsha	Asteraceae	Seed, Fruit	Antiseptic	The leaves extract is applied on injury to stop the bleeding and is also as an antiseptic.
7	<i>Asparagus racemosus</i>	Shatabari	Kelati	Asparagaceae	Roots	Arthritis	500gm of Powder prepared from roots is mixed with milk and given to cattle for one month for

	Willd.						treatment of arthritis.
8	<i>Azadirachta indica</i> A. H.L.Juss.	Neem	Neem	Meliaceae	Stem,Leaves	Stomach ache, Injury	Paste of the leaves mixed with mustard oil is applied on fractured horn to heal the injury and leaves are given 2- 3 times a day to cattle in stomach ache.
9	<i>Bauhinia variegata</i> (Linn.) Benth.	Kachnar	Karailu	Fabaceae	Leaves, bark	Dysentery, wound	Dried leaves and bark are mixed with cold water and applied on the skin for wound healing, removal lice and also given orally to treat dysentery
10	<i>Berberis aristata</i> DC.	Daruhalidi	Kasham	Berberidaceae	Leaves and roots	Cut, wound, bone fracture cough	Juice of root is prepared and few drops are applied to cure eye infection. Paste of leaves is applied on the fractured bone.
11	<i>Bergenia ciliata</i> (Haworth) Sternb.	Pashanbheda	Saptori	Saxifragaceae	Rhizomes, leaves, flowers	Lactation, cough, dysentery, skin diseases, food poisoning	The leaves and flowers are dried and given orally to increase the lactation. Dry rhizome decoction is prepared and given orally to cure cough, dysentery, skin disease, and food poisoning.
12	<i>Butea monosperma</i> Lam.	Palash	Palash	Fabaceae	Flower	Dysuria. Paralysis	Flower decoction is given to the cattle thrice a day for one month to treatment of dysurea and paralysis.
13	<i>Bombax ceiba</i> Linn.	Semal	Shrimble	Bombacaceae	Stem and bark,	Dislocated bones,gynaecology	Bark paste mixed with turmeric powder applied on dislocated bones. Slime extracted by crushing stem and bark is applied to vaginal ostium to facilitate delivery.
14	<i>Brassica campestris</i> Hook.	Sarson	Sherua	Brassicaceae	Seed	Skin	The paste of crushed seed is applied on the animal body to cure skin infection.
15	<i>Cannabis sativa</i> Linn.	Bhang	Bhang	Cannabinaceae	Stem,Seed	Inflammation	Cut the stem into small pieces and fed to livestock to cure inflammation.
16	<i>Catharanthus roseus</i> Linn., G.Don	Sadabahar	Sadabahar	Apocynaceae	Whole plant	Wound	Whole plant extract is applied topically to cure wound.
17	<i>Chenopodium album</i> Linn.	Bathua	Bhithu	Amaranthaceae	Seed, root, stem	Indigestion, dysentery	Seeds are dried and given orally to treat indigestion. Juice is prepared from Fresh roots and stem and is given orally for the treatment of dysentery.
18	<i>Citrus limon</i> Linn. Burm.f.	Neebu	Nimbu	Rutaceae	Fruit	Bloat, Haemorrhagic septicaemia	Sometimes by feeding of young leaves of <i>Quaricus leucotrichophora</i> cause the bloat formation; to treat this fruit juice is drenched to the animals as a antidote. Powder of red chillies and citrus fruit is rubbed is inside the swollen throat of affected animal by hand to treat the haemorrhagic septicaemia.
19	<i>Coriandrum sativum</i> Linn.	Dhania	Bhughla	Apiaceae	Seed	Diarrhea, Fever	Seeds powder mixed with water and given to the animal twice a day to treat loose motion.
20	<i>Curcuma longa</i> Linn.	Haldi	Heldge	Zingiberaceae	Rhizome	Fever	Fresh rhizome paste is given to cure fever in animal.
21	<i>Cynodon dactylon</i> Linn. Pers.	Dhoob	Druva	Poaceae	Whole plant	Skin, Cough, Lactation	Juice is extracted from whole plant and mixed with cow milk and given orally to treat skin allergy and cough. The areal part of plant is given as fodder for increasing lactation and milk quality.
22	<i>Dalbergia sissoo</i> Roxb.	Shisham	Shishwa	Fabaceae	Leaves	Leg sore, Stop bleeding	Paste of plant leaves is prepared and mixed with water is given animals to cure blisters and leg soreness. Juice of leaves given to thrice a day in order to stop the bleeding.
23	<i>Datura metel</i> , Linn.	Dhatura	Dhatura	Solanaceae	Ripened fruit	Cold	The paste of ripened fruit is given to cattle once a day for 7 days to cure cold.
24	<i>Eleusine coracana</i> Linn.Gaermer	Koda	Kodra	Poaceae	Seeds	Diarrhoea, Dysentery	The seeds are grinded to make flour and given to pet by mixing with salt to cure the dysentery and diarrhoea.
25	<i>Euphorbia hirta</i> Linn.	Dudhi	Dudhi	Euphorbiaceae	Stem, leaves	Wound,	Dried stem and leaves are crushed and mixed with cold water and given orally to increase the milk quantity. Paste of stem and leaves are applied on wound to facilitate healing.
26	<i>Ficus religiosa</i> Linn.	Peepal	Peepal	Moraceae	Leaves and bark	Wound, Skin allergy, Constipation	Bark and leaves powder is mixed with cow milk and applied to treat the wound and skin allergy. Leaf extract is given orally to cure indigestion and constipation.
27	<i>Ficus roxburghii</i> Wall.	Timla, Gular	Trimble, Trimmal	Moraceae	Seed, Fruit	Fever, Dysentery	The seeds are well grinded to make the powder and given orally with water 2-3 time a day to the cure of fever. Well grinded fruit is mixed with water and salt and given to the animal to cure dysentery.
28	<i>Grewia optiva</i> J.R Drummondex.	Bhimal	Bihul	Tiliaceae	Leaves	Glactogogue,	The paste of fresh leaves applied directly on thrones of the cattle. The fresh leaves of plant are given as fodder to increase the lactation and milk quality.
29	<i>Hibiscus rosa-sinensis</i> Linn.	Gudhal	Gudhal	Malvaceae	Bark	Twitching	Decoction of bark is given twice a day to cure twitching in animal.
30	<i>Juglans regia</i> , Linn.	Akhrot	Khod	Juglandaceae	Leaves	Foot and Mouth Diseases	Leaves extract is applied 2-3 times daily on cleft of the hooves to cure FMD.
31	<i>Justicia</i>	Arusa	Benja	Acanthaceae	Leaves	Food poisoning,	Juice extracted from fresh leaves is given to treat

	<i>adhatoda</i> Linn.					Constipation, cold, indigestion	food poisoning, constipation, cold, and indigestion.
32	<i>Mangifera indica</i> Linn.	Aam	Aambu	Anacardiaceae	Fruits	Constipation, mouth infection	Ripened fruit is fed to animal for 4–5 days to cure mouth infection and constipation
33	<i>Nicotiana tabacum</i> Linn.	Tambaku	Tabaku	Solanaceae	Leaf	Ecto-parasite	Leaves extract are applied on skin against ectoparasite.
34	<i>Ocimum sanctum</i> Linn.	Tulsi	Tulsi	Lamiaceae	Leaf	Wound	Paste of leaves is mixed with <i>Piper nigrum</i> and applied over the wound.
35	<i>Oryza sativa</i> Linn.	Chawal	Dhan	Poaceae	Grain	To enhance the lactation	The grains of rice are cooked with black pepper, black salt and black gram and given once a day to cattle for one month to increase the lactation and milk quality.
36	<i>Phyllanthus niruri</i> Linn.	Bhumianwla	Bhumianwla	Euphorbiaceae	Whole plant, Root	Milk Disorder and fever and cough	The powder of dried plants is given with wheat flour to enhance the milk production in goat. Root decoction is given to cure fever and cough.
37	<i>Pinus roxburghii</i> Sarg.	Chir pine	Chil	Pinaceae	Resins	Pneumonia	5ml of chir (<i>Pinus</i> oil) is poured in 10 litre boiled water to offer vapour treatment to the sick animal to cure pneumonia.
38	<i>Piper nigrum</i> Linn.	Kali mirch	Marche	Piperaceae	Seed	Worms and insect bites	A well grinded powder of piper is mixed with butter and ghee pasted on the site bitten by poisonous worms of cattle.
39	<i>Solanum nigrum</i> Linn.	Common Night Shed, Mokoi	Mokoi	Solanaceae	Whole plants	Flatulency	The paste of whole plant is prepared and mixed with 500ml of goat milk. 50ml of this extract is given orally twice a day for 5-6 days to treat flatulency in cattle, sheep, and goat.
40	<i>Solanum surattense</i> Burm.f	Burmhi	Kantakari	Solanaceae	Seed leaves, Roots	Sinusitis, Eye disease, burns	Ripened fruit is well grinded and mixed with water and few drops are administered through nasal route in case of leishmaniasis.
41	<i>Tagetes patula</i> Linn.	Genda	Doli ka fool	Asteraceae	Leaf	Stop bleeding	Juice of fresh leaves is applied topically for healing up of broken horn, and leaf paste is used to stop bleeding.
42	<i>Tinospora cordifolia</i> (Wild) Hook.	Giloy	Gulaj	Menispermaceae	Bark, Stem and leaves	Vital, mastitis and infection injury	The paste of leaves and bark is used to cure skin disease, vaginal infection and injuries.
43	<i>Triticum aestivum</i> Linn.	Gahun	Kanak	Poaceae	Seed	Constipation	A mixture of cow ghee and wheat flour is given to the animal to cure constipation.
44	<i>Urtica dioica</i> Linn.	Bichu Ghass	Kungshi	Urticaceae	Stem, leaves	Fever, Milk Quality	Leaves are dried in sunlight and then grinded to make powder and given to cow with wheat and maize flour to increase the milk quality and production. Paste of leaves is also given in fever.
45	<i>Vigna mungo</i> (Linn.) Hepper	Kali dal	Mash	Fabaceae	Seed	Poisoning	The mixture of seed powder and water is given to cattle to cure the poisoning.
46	<i>Viola odorata</i> Linn.	Vanaksa	Banaksha	Violaceae	Whole plant	Heart attack	The whole plant with flower is given five times a day to calf for avoiding the heart attack.
47	<i>Withania somnifera</i> Linn.	Ashvagandha	Ashvagandha	Solanaceae	Root	Cure retard placenta	Powder of roots is boiled with milk and is given to animal to cure retard placenta.
48	<i>Zea mays</i> Linn.	Makka	Challi	Poaceae	Fruit, Grain	Foot and mouth disease, lactation	Maize flour is given with water to treat the foot and mouth diseases in cattle. Maize flour mixed with salt and water is given to cattle to increase the thirst or to increase of water intake capacity. Maize flour is mixed with hot water and given to cattle once in a day to increase the lactation and to increase the milk quantity and quality.
49	<i>Zingiber officinale</i> Roscoe.	Adrak	Adra	Zingiberaceae	Rhizome	Constipation,	Rhizome is crushed and given with wheat flour to cure constipation.

*Bahumia variegata* (Linn.) Benth.*Bergenia ciliata* (Haw) Sternb.*Bombex ceiba*

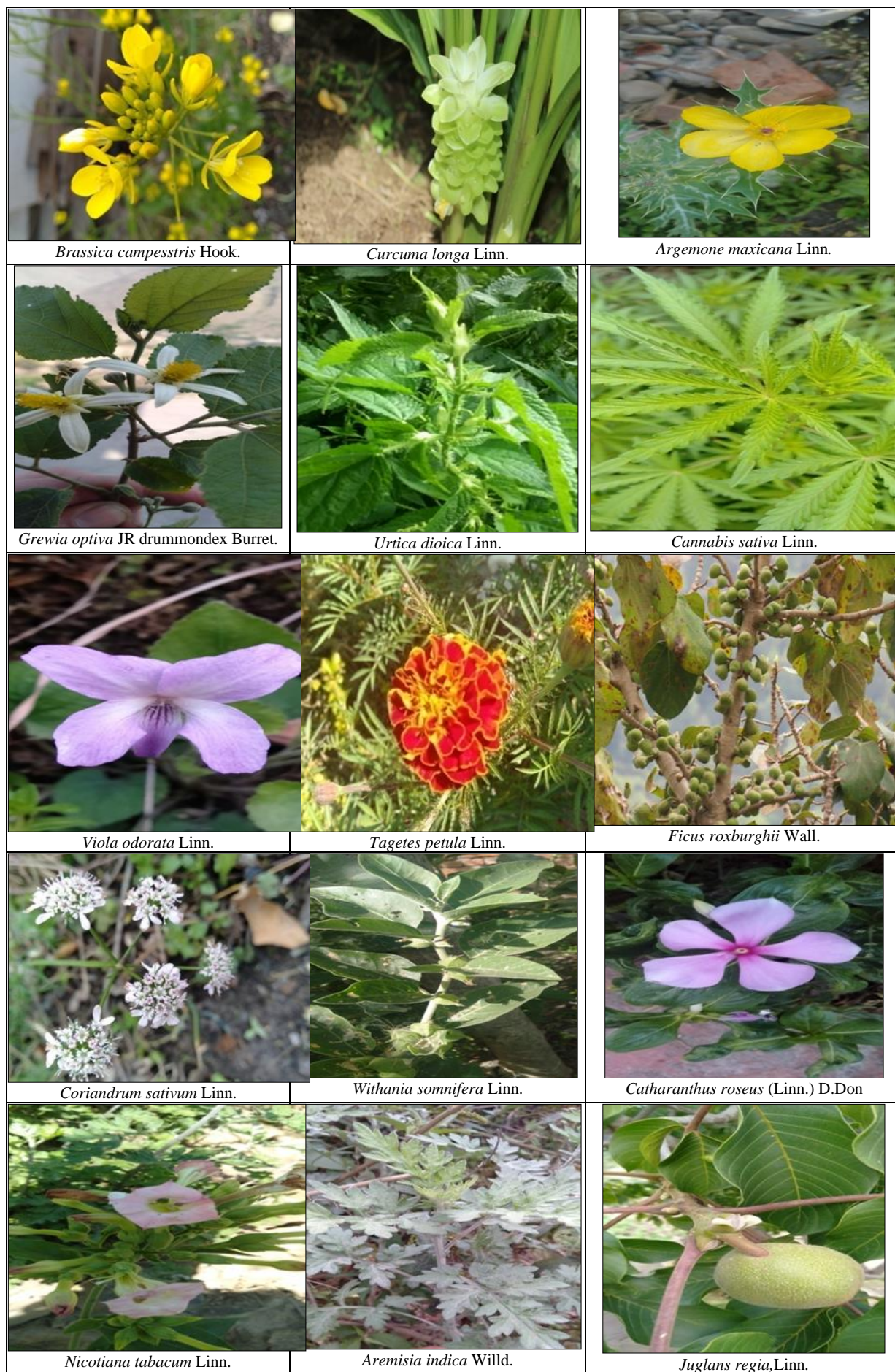


Fig 2

Conclusion

In present study, 49 species of ethno veterinary medicinal plants have been reported, identified and enumerated from the Karsog block of Mandi district of Himachal Pradesh, North West Himalaya. The dominant plant species used by local inhabitants in the treatment of livestock's belong to family Solanaceae, followed by Fabaceae, Poaceae, Zinziberaceae, Asteraceae, Moraceae, Euphorbiaceae etc. The plant species are used for ethno veterinary practiced by livestock owners and local Vaidyas to diagnose the different type of animal diseases like dysentery, diarrhoea foot and mouth diseases, constipation, food poisoning, cold and cough, arthritis, wound, bloat, pneumonia, inflammation, bone fracture, gynaecology, lactation, skin disease, indigestion, ecto- parasites, rheumatism etc. The medicinal plant species are used for livestock health management which can reduce the costs significantly. In the present study, we have documented that old age of Vaidyas and farmers, shepherds have the great knowledge and experience for curing the livestock ailments. The new generation of the shepherds, farmers and Vaidyas are not much interested in the agriculture and shepherds professions due to their modern lifestyles. Hence there is an urgent need to pay attention and to document the traditional knowledge for the future generations before the disappearance from the local inhabitants of the study area.

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