

**PHARMA SCIENCE MONITOR****AN INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES**Journal home page: <http://www.pharmasm.com>**A REVIEW OF ETHNOVETERINARY PRACTICES ASSOCIATED WITH ANIMAL HEALTHCARE IN BARDA HILLS GUJARAT, INDIA**Krutika Joshi^{1*}, K.Nishteswar²¹Ph. D scholar, Deptt. of Dravyaguna ; IPGT and RA, GAU, Jamnagar²Professor, H.O.D; Deptt. of Dravyaguna ; IPGT and RA, GAU, Jamnagar**ABSTRACT**

Systemic concept of ethno-veterinary medicine deals with the folk beliefs knowledge skills methods and practices pertaining to the healthcare of animals. Reported tribal claims of Barda hills with regards to veterinary medicine have been taken up for analysis basing on the published sources on ethno-medicine of the region. Out of 602 plants reported 122 herbs were indicated in the management of disease of the cattle. Recorded folk-lore claims were compiled and analyzed by a critically review of published information about flora of Barda Hills Gujarat. Medicinal plants having diverse therapeutic action especially on animals were compiled and analyzed according to their actions or effects. The observations were based on the folklore claims of Barda hill region. 122 plants were found having one or more actions like anthelmintic analgesic disinfecting galactagogue and abortive effects especially on animals. All the drugs were compiled and analyzed used in management of veterinary health and reported. Amongst the claims 85 plants were mentioned in Ayurvedic classics or texts whereas 37 plants are non classical that are commonly growing in Barda region.

KEYWORDS: Barda hills, Tribal claims, Ethanomedicine, Veterinary science, Ayurveda.**INTRODUCTION**

The knowledge of medicinal plants has been accumulated in the course of many centuries based on different medicinal systems such as Ayurveda, Unani and Siddha.¹ The oldest existing veterinary text from India is a treatise entitled Ashwayurveda (Ayurveda dealing with horses earlier to 10th century A. D) deals with diseases of horses; also Hastayurveda (Ayurveda dealing with elephants) was also in practice. Certain Ayurvedic texts also dealt with veterinary medicines; as in Charaka samhita, a list of ingredients for preparing enema for elephants, camels, horses and sheep was recorded. In Rajmar-tand (11th century) a chapter was devoted to the treatments of domestic animals².

Concept of ethno-veterinary medicine deals with the folk beliefs, knowledge, skills, methods and practices pertaining to the healthcare of animals³. India is well known for significant geographical diversity which has favored the formation of different habitats and vegetation types. India is enriched with 15 % (3000-3500) out of 20,000 medicinal plants all over the world. About 90 % of these are found growing wild in different climatic regions of the country⁴. Large populations in India still rely on

traditional herbal medicine⁵. Ethnomedicinal knowledge has been documented from various parts of the Indian sub-continent including Gujarat.

In the Gujarat state, several medicinal herbs are flourishing which has been in constant use by local inhabitants in serving to cure the ailments of livestock as ethnoveterinary medicine. Floral diversity of Barda (Latitude: 21.64° Longitude: 69.63°)⁶ is the highest and important among all areas studied by individuals and institutions in Gujarat State. According to the survey of forest department; this region has recorded 977 species which is about 74% of total medicinal species of the state⁷.

Previously, J. I. Thaker (1910) recorded 684 flowering plants in Barda region. Recent study (1996-98) conducted by P. S. Nagar has documented over 700 species of flowering plants in Barda hills. He also mentioned that 15.5% plant species are rare in the area. High species diversity was recorded in Venu, Babri and the surrounding area of the Barda.

The tribal inhabitants from Barda hills region use different forest products based on their ethnobotanical and ethnoveterinary knowledge passed from their ancient culture and ethnic practices. Hence they have evaluated many plants used for veterinary health. In this study, an attempt has been made to explore the hidden treasure of folklore claims used specially in animal health and diseases.

METHODS

Recorded ethnoveterinary claims were compiled and analyzed by a critical review of published information and local books written about flora of Barda Hills, Gujarat. Plants having diverse therapeutic action especially on animals were analyzed according to their actions or effects. Also the relevant terms are applied for the local names used for the plants as well as diseases.

OBSERVATIONS AND RESULTS

Tribes are living close to their animals and thus having good knowledge for veterinary diseases and their management. For the same, plants are used processed afresh and mixed with ingredient that is available locally, such as Ghee, Buttermilk, oil etc.

In this study, total 122 species of medicinal plants are enumerated with their uses in Animal diseases. The dominant families are Fabaceae (28), Caesalpinioideae(7), Compositae (6), Mimosaceae and Poaceae(5), Malvaceae and Tilliaceae (4), Asteraceae, Capparadeae and Rhamnae (3), whereas single plant from 26 family and 2 plants from 14 families were having one or more action on cattle and animals.

In the study 52 plants were observed employed externally for wound healing, to cure ulcer and non-healing wound, to kill insects stuck on skin or in wounds and also as disinfectants. For this purpose ash of the plant mixed with oil were used. Some plants were found useful to cure horn disease known as Kamedo in local language of Barda hills. *Dhanvayasa(fagonia arebica)* is used to cure Urticaria in camels where as *Chitraka (Plumbago zeylanica)* is used to remove warts of oxen.

Table: 1 Externally used Medicinal plants

Latin name	Sanskrit name	Local name	Part used	Use in animals
<i>Acacia Arabica</i> (Mimosaceae)	Babula	Bavala	Bark, Leaves, Fruits	Bark used for traumatic wounds and ulcers
<i>Argemone Mexicana</i> (papaveraceae)	Kantaki, swarna-kshiri	Darudi, satyanashi	Root, whole plant	Ash with oil applied on Traumatic ulcers(Bhatha)
<i>Azadirachta indica</i> (meliaceae)	Nimba	Limado	Leaves	As disinfectant, in horses used on rashes with sharapunkha (<i>Tephrosia purpurea</i>),
<i>Berginia odorata</i> (Elatineae)		Lavadiyu, okharad	Leaves	Applied for traumatic ulcers of animals, Also used for oedema of oxen.
<i>Blumea lacera</i> (compositae)	Kukunder	Kapurio	Leaves	Used in wound healing
<i>Blumia wightiana</i> (compositae)		Chanchadm ari	Whole plant	Used to kill lice (Chanchad) stuck on animals
<i>Pongamia pinnata</i> (fabaceae)	Karanja	Kanaji	Oil	Used in non healing wounds and ulcers, also kills insects on wound
<i>Canavalia ensiformis</i> (fabaceae)	Khadaga- shimbi	Taravaradi	Leaves	Used in non healing wounds and ulcers, wound maggots
<i>Capparis sepiaria</i> (Capparidaceae)	Ahimsra	Kanthari	Heart wood	Ash of wooden part for topical healing of ulcer
<i>Cassia occidentalis</i> (Caesalpiniaceae)	Kasamarda	Kasundro	Leaves	Used in ulcers
<i>Cleome simplicifolia</i> (capparadeae)		Talavani	Whole plant	Ash with oil applied on Traumatic ulcers of back
<i>Coldenia procumbens</i> (boraginaceae)	Tripakshi	Basariyo okharad	Whole plant	Ash used in wound and ulcer healing
<i>Daemia extensa</i> (Asclepiadaceae)	Chamar dudheli	Yugma- phala	Whole plant	Ash is used in ulcers and warts
<i>Datura metel</i> (solanaceae)	Dhatura	Dhaturo	Whole plant	Used as disinfectant by fumes
<i>Erythrina indica</i> (Fabaceae)	Prabhadraka	Panderavo	Leaves	Used for wound maggots
<i>Erythrina suberosa</i> (fabaceae)	Paribhadra	Jagariyo khakharo	Root, Bark	Used topically on disease called Laana in tribal language
<i>Fagonia arebica</i> (zygophyllaceae)	Dhanvayasa	Dhamaso	Whole plant	Ash of plant applied locally with Tutha and Gandhaka for urticaria of camel(Khas/Kharajavu)
<i>Gardenia gummifera</i> (rubiaceae)	Nadihingu	Malan, dikamali	Leaves	Paste used in traumatic wounds and ulcers
<i>Helicteres isora</i> (sterculiaceae)	Avartaki,	Marda- shingi	Leaves	Leaves of Avartani and Avartaki applied for Traumatic ulcers(Bhatha),
<i>Hibiscus solandra</i> (Malvaceae)		Tali	Whole plant	Ash with oil applied on Traumatic ulcers(Bhatha)
<i>Hiptage madablota</i> (Malpighiaceae)	Madhavi	Madhavi	Leaves	Paste for Wound maggots

<i>Hydrophylax maritime</i> (Rubiaceae)		Dariyai shankhalo	Whole plant	Used as disinfectant in ulcers, wounds and also cures itching of horses and Camlin.
<i>Hygrophilla spinosa</i> (Acanthaceae)	Ekharo	Kokilaksha	Whole plant	Used in ulcers with oil
<i>Indigofera argentea</i> (fabaceae)	Kala klitaka	Jangali gali	Whole plant	Ash with oil heals Traumatic wounds wound and non healing ulcers, also get rejuvenate skin and hair
<i>Indigofera cordifolia</i> (fabaceae)	Laghunili	Daliyo	Whole plant	Ash of the plant with Sarshap tail is used for topical application in wounds and ulcers(Bhatha),
<i>Indigofera paucifolia</i> (fabaceae)	Zilla	Ziladi	Whole plant	Ash with oil used in Traumatic wounds wound and non healing ulcers, also used in urticaria of camels,
<i>Indigofera trita</i> (fabaceae)		Jangali gali	Whole plant	Ash with oil for Traumatic wound(Bhatha) of horses
<i>Lotus garcinii</i> (fabaceae)		Moto bhakho	Whole plant	Ash with oil is used for traumatic wounds and ulcers(bhatha), Also used in urticaria of camels
<i>Luffa acutangula</i> (Cucurbitaceae)	Tikta koshataki	Kadavi ghi-sodi	Leaves, tender fruits	For Traumatic wound of Shoulders due to ropes
<i>Molluga hirta</i> (Aizoaceae)	Okharadi	Mitho okharad	Whole plant	Ash used in wound and Traumatic ulcer healing
<i>Moschosma polystachium</i> (Lamiaceae)		Avachi bavachi	Leaves	Used in Disease of horns (Kamedo) - as fumes and juice is used topically
<i>Odina wodier</i> (Anacardiaceae)	Zingini	Mavedi	Root barks	Used as disinfectant for washing wounds and ulcers
<i>Plumbago zeylanica</i> (plumbagineae)	Chitraka	Chitro	Root	Paste used to remove warts on oxes
<i>Poinciana elata</i> (Caesalpinioideae)	Siddheshwara	Sandhesaro	Leaves	Used in traumatic ulcers and as poltis for muscular injury
<i>Polyalthia cerasoides</i> (annonaceae)		Umdo	Bark, Leaves	Paste used for non healing ulcers and wounds and Paste applied on Wound maggots (Bhatha ni Jivat)
<i>Premna herbaceae</i> (verbenaceae)	Ghiteli	Bhumi jambuka	Leaves, branches	Crushed with oil and used in non healing wound and ulcers
<i>Pterocarpus marsupium</i> (fabaceae)	Bijaka	Biyo	Leaves	Used topically in wound of horses
<i>Rhynchosia viscose</i> (fabaceae)		Runchhalo fagiyo	Root	Heals abrasions and bleeding ulcers,
<i>Sapindus trifolius</i> (sapindaceae)	Arishtaka	Aritha	Seeds	Seeds used locally to kill lice stuck on bodies of animals
<i>Sesamum laciniatum</i> (Pedaliaceae)		Jangali tal	Whole plant	Used oil in ulcers of oxen
<i>Siegesbeckia orientalis</i> (asteraceae)		Pili bada-kadi	Whole plant	Ash of plant used in healing of animal horns gangrene(Kamedo)

<i>Tephrosia purpurea</i> (fabaceae)	Sharapunkha	Safonka, Ghodakan	Leaves	Leaves juice is used in wound and non healing ulcers of horses and other animals
<i>Terminalia tomentosa</i> (Combretaceae)	Saradru	Sajad	Bark	Used as wound healing
<i>Trianthema monogyna</i> (Aizoaceae)	Varshabhu	Satodo	Fresh plant	Used for fumigation in shed of animals
<i>Truimfetta rhomboida</i> (Tilliaceae)	Zinzirita	Zipti	Root, Leaves	For non healing traumatic wound and ulcers
<i>Vahlia voscosa</i> (Saxifragaceae)		Pilo agiyo	Leaves	Used for pain of Kameda(Gangrene of one horn of animal) also removes its maggots and heals the wound
<i>Vernornia anthelmintica</i> (compositae)	Vanya jiraka	Kalijiri	Seeds	Used as anthelmintic in horses
<i>Vitis repanda</i> (Vitaceae)		Gando-velo	Leaves	Leaves used externally on traumatic ulcers and simple ulcers (Chanda)
<i>Vogelia indica</i> (Plumbagineae)	Rakta chitraka	Pavai	Whole plant	Ash is used in ulcers and warts
<i>Woodfordia floribunda</i> (Lythraceae)	Dhataki	Dhavadi	Leaves	In bleeding ulcers and abrasions used with Avartaki (<i>Helicteres isora</i>) 1 part and Dhataki (<i>woodfordia fruticosa</i>) 4 part decoction.

Tribes have vast knowledge for internal used plants in various diseases like Atisara (Diarrhoea), Aafro (Indigestion), Shili (Allergic conditions) and also know management of placenta removal, feeding habits, and drugs acting as anthelmintic.

Table: 2. internally used Medicinal plants

Latin name	Sanskrit name	Local name	Part used	Use in animals
<i>Abrus precatorius</i> (fabaceae)	Gunja	Chanothi	Root, seeds	Used to kill animals
<i>Acacia arabica</i> (mimosaceae)	Babula	Bavala	Bark, leaves, fruits	Food for goat, camels, sheep, fruits are galactogogue
<i>Acacia pennata</i> (mimosaceae)	Latakhadira	Khervela	Bark	Decoction used in eye infections of buffaloes(fulu)
<i>Acacia planifrons</i> (mimosaceae)		Chatro baval	Leaves, flowers	Food for goats
<i>Alhagi camalorum</i> (fabaceae)	Yavasa	Javaso	Whole plant	Food for buffaloes and camels
<i>Alysicarpus longifolius</i> (fabaceae)		Moto sameravo	Whole plant	Food for horses
<i>Alysicarpus vaginalis</i> (fabaceae)		Sameravo	Whole plant	Galactagogue for goats and sheep

<i>Amaranthus spinosus</i> (amaranthaceae)	Kantaka marisha	Kantalo dambho	Whole plant	Galactagogue for in cattle
<i>Andropogon hysterica</i> (poaceae)		Lampado	Whole plant	Conceives animal and also increases milk quality
<i>Andropogon ischodemum</i> (poaceae)		Jenjvo	Whole plant	Used as increasing energy and also milk quality, best food for animals
<i>Andropogon laniger</i> (poaceae)	Lamajjaka	Ashakhara	Whole plant	Causes abdominal pain in horses, also effects in milk
<i>Areca catechu</i> (palmaceae)	Puga	Sopari	Fruits	Used as best anthelmintic in dogs
<i>Asparagus racemosus</i> (asparagaceae)	Shatavari	Shatavari	Root	Used as mucilegenous (Upalepaka) in animals
<i>Azadirachta indica</i> (meliaceae)	Nimba	Limado	Leaves	Food for camels and goats.
<i>Balanites roxburghii</i> (simaroubaceae)	Ingudi	Ingoriyo	Flowers and fruit	Flowers and fruit decoction for indigestion (Adhman) in animals
<i>Balsamodendron mukul</i> (burseraceae)	Guggulu	Gugal	Leaves	Food for animals
<i>Bambusa arundinacea</i> (poaceae)	Vansha	Vaans	Leaves	Used in placenta removal and used in horses to cure corryza
<i>Bauhinia tomentosa</i> (caesalpiniaceae)	Pitakanchana	Pilo asondaro	Leaves and bark	Decoction used in allergic reactions of animals
<i>Berginia odorata</i> (elatineae)		Lavadiyu, okharad	Leaves	Galactagogue for buffaloes. Food for animals
<i>Bidense pilosa</i> (compositae)		Samara kokadi	Whole plant	Decoction with jeggary used for placental removal,
<i>Boerhavia verticillata</i> (nyctaginaceae)	Punarnava	Punarnava	Whole plant	Used as anthelmintic and also increases milk
<i>Bombax malabaricum</i> (bombacaceae)	Shalmali	Shimalo	Leaves, unripe fruits	Food for animals
<i>Bridelia retusa</i> (euphorbiaceae)	Ekavira	Ekalakanto	Leaves	Used as anthelmintic in animals
<i>Caesalpinia bonducella</i> (caesalpiniaceae)	Kuberakshi	Kakacha	Leaves	Used as anthelmintic in animals
<i>Canna indica</i> (cannaceae)	Silarumba	Akkalber	Root	Used in indigestion of animal after cooking with rice and pepper
<i>Cassia auriculata</i> (caesalpiniaceae)	Avartaki,	Aaval	Leaves, whole plant	Used with salt in muscular strains in oxen, juice of the leaves used in facial palsy of animals, used in animal as anthelmintic with Ajamoda(<i>Apium graveolens</i> , Linn.) and Mahanim-

				ba(<i>Melia Azedarach</i>) leaves, also in indigestion and diarrhoea of animals
<i>Cassia pumila</i> (caesalpiniaceae)		Chamediyu	Whole plant	Food for horses and buffaloes
<i>Cleome simplicifolia</i> (capparadeae)		Talavani	Whole plant	Fodder (food for animals)
<i>Clerodendrum phlomidis</i> (verbenaceae)	Agnimantha	Arani	Leaves	Used in allergic reactions of animals with buttermilk, also in diarrhoea (Chheraman)
<i>Cocculus hirsutus</i> (menispermaceae)	Patalgarudi	Vevdi	Pan-chang	Fodder, specially camels and goats
<i>Commelina nudiflora</i> (commelinaceae)	Vatsapriya	Shishamulyu	Root	Used to change feeding of animals
<i>Corchorus antichorus</i> (tilliaceae)		Bahufali	Whole plant	Galactagogue for animals, fed with othe food supplement to buffaloes for more milk.
<i>Corchorus olitorius</i> (tilliaceae)	Mahachuncha	Chhunchh	Whole plant	Galactagogue for animals
<i>Cressa cretica</i> (convulvaceae)	Rudanti	Padiyo	Whole plant	Galactagogue for buffaloes
<i>Crotolaria medicaginea</i> (fabaceae)		Rana-methi	Whole plant	Food for animals
<i>Cucumis sativus</i> (cucurbitaceae)	Kakadai, Aindri	Indramana	Fruits	Used as anthelmintic in horses
<i>Cyamopsis tetragonoloba</i> (fabaceae)	Gorakshaphalini,	Guvar	Whole plant	Galactagogue, ash used for back strain of ox(Kandh avvi), in large dose causes indigestion and death
<i>Desmodium laxiflorum</i> (fabaceae)		Ruchhalo pandadio	Whole plant	Food for animals
<i>Desmodium triflorum</i> (fabaceae)		Zinko pandadio	Whole plant	Food for animals
<i>Dichrostachys cinerea</i> (mimosaceae)	Virataru	Marudha		Leaves used as anthelminitic in horses
<i>Digera arvensis</i> (amaranthaceae)	Manjarika	Kanajo	Whole plant	Used to increase milk in cattle.
<i>Dregea volubilis</i> (asclepiadaceae)	Madhumalati	Moti dodi	Whole plant	Used in allergic reactions with buttermilk and jeggary
<i>Echinops echinatus</i> (asteraceae)	Utkantaka	Utkanta	Whole plant	As galactagogue in buffaloes
<i>Erythrina indica</i> (fabaceae)	Prabhadraka	Panderavo	Leaves	as galactagogue applied on hoarse breasts
<i>Ficus glomerata</i> (moraceae)	Udumbara	Umbaro	Bark	Bark used in diarrhoea (Chheraman) with buttermilk

<i>Flacourtia sepiaria</i> (flacourtiaceae)		Lodri	Leaves	Food for buffaloes
<i>Gloriosa superba</i> (liliaceae)	Languli	Kankasani,	Root	Used as anthelmintic in animals
<i>Grewia tiliaefolia</i> (tilliaceae)	Dhanvana	Dhramana	Leaves, tender branches	Galactagogue for buffaloes
<i>Helicteres isora</i> (sterculiaceae)	Avartaki, mrugashrungi	Marda-shingi	Leaves	leaves of Avartani are galactagogue
<i>Crotalaria hebecarpa</i> (fabaceae)		Adadiyo	Whole plant	As galactagogue in animals
<i>Hibiscus solandra</i> (malvaceae)		Tali	Whole plant	As galactagogue in animals
<i>Hydrophylax maritime</i> (rubiaceae)		Dariyai shankhalo	Whole plant	Cures itching of horses and camels
<i>Indigofera cordifolia</i> (fabaceae)	Laghunili	Daliyo	Whole plant	Causes indigestion and abdominal pain in animals
<i>Indigofera paucifolia</i> (fabaceae)	Zilla	Ziladi	Whole plant	given with Avartani(<i>Helicteris iso- ra</i>) leaves and salt in acute indiges- tion conditions of animals
<i>Indigofera trifoliata</i> (fabaceae)		Rati methi	Whole plant	Food for animals
<i>Lavendula burmanni</i> (lamiaceae)		Jangaliu la- vander	Root barks	Used in diarrhoea (Chheraman) 1part with 2 part Avartaki in decoc- tion form
<i>Maerua arenaria</i> (capparadeae)		Hemkand	Whole plant	Food for animals, specially camels and goats
<i>Melia azedarach</i> (meliaceae)	Mahanimba	Bakan li- mado	Leaves	Leaves and black cumin seeds with flour are used as anthelmintic in horses
<i>Parkinsonia aculeate</i> (fabaceae)		Rambaval	Leaves, fruits	Used as food for animals
<i>Pavonia glechomifolia</i> (malvaceae)		Adariya	Whole plant	Food for animals
<i>Pevonia ceratocarpa</i> (malvaceae)		Karandiyu	Whole plant	In allergic reaction of buffaloes - whole plant used internally with but- termilk
<i>Phaseolus aconitifolius</i> (fabaceae)	Makushthaka	Math	Whole plant	Decreases milk quantity, but food for horses, oxen and camels
<i>Phragmites karka</i> (poaceae)	Nala	Nali, Naairi	Whole plant	Used in coryza (Pratishyaya) of hors- es
<i>Poinciana elata</i> (caesalpiniaceae)	Siddheshwara	Sandhesaro	Leaves	Decoction used in allergic reactions of animal

<i>Prosopis spicigera</i> (mimosaceae)	Shami	Khijado	Leaves and tender branch	Used for food of buffaloes, goats and sheep
<i>Pterocarpus marsupium</i> (fabaceae)	Bijaka	Biyo	Leaves	food for animals
<i>Pueraria tuberosa</i> (fabaceae)	Vidarikanda	Khakharvel	Root bulb	Galactagogue for goats and sheep
<i>Rhynchosia viscosa</i> (fabaceae)		Runchhalo fagiyo	Root	Used for diarrhoea of cattle
<i>Rivea hypocrateriformis</i> (convolvulaceae)	Phanjika	Fanga	Tender branch	Decoction used to remove placenta
<i>Sida humilis</i> (malvaceae)	Bhumibala	Bhonyabala	Leaves	In diarrhoea (Chheraman) internally with cumin seed, juice of <i>aloe vera</i> , onion and buttermilk
<i>Sonchus oleraceus</i> (asteraceae)		Dudhali sonaki	Whole plant	As galactagogue in cows and buffaloes
<i>Sterculia urens</i> (sterculiaceae)	Dhaval	Kadayo	Leaves, tender branch	Tender branches and bark are soaked in water and given for chest pain in animals.
<i>Sysbania aegyptiaca</i> (fabaceae)	Jayantika	Jayati	Leaves	Food for animals
<i>Tamarindus indica</i> (caesalpinioideae)	Chincha	Amla	Leaves, fruits	Used as food for camels, goats
<i>Tamarix gallica</i> (tamaricaceae)	Jhavuka	Prans, zau	Root nodes	Bark/root nodes decoction internally for allergic reaction in buffaloes.(Shili)
<i>Teramnus labialis</i> (fabaceae)		Runchhali valiyo velo	Whole plant	Galactagogue, special nutritious food for animals, horses
<i>Terminalia bellirica</i> (combrataceae)	Bibhitaka	Baheda	Leaves, fruits	Food for animals
<i>Terminalia tomentosa</i> (combretaceae)	Saradru	Sajad	Bark	Bark used orally to conceive buffaloes
<i>Tribulus terrestris</i> (zygophyllaceae)	Gokshura	Gokharu	Tender plant	Food for animals
<i>Tricholepis radicans</i> (compositae)		Bethu fusiuru	Seeds	Used for abdominal pain of horses
<i>Truimfetta rhomboida</i> (tilliaceae)	Zinzirita	Zipti	Root, whole plant, leaves	Galactagogue, root paste for placental removal,
<i>Uraria picta</i> (fabaceae)	Prushniparni	Pithavan	Leaves	Used in coryza (Pratishyaya) of horses
<i>Vahlia viscosa</i> (saxifragaceae)		Pilo agiyo	Leaves	Used for pain of Kameda(gangrene of one horn of animal)

<i>Vernornia anthelmin-tica</i> (compositae)	Vanya jiraka	Kalijiri	Seeds	Used as anthelmintic in horses
<i>Vicoa auriculata</i> (compositae)		Sonasali	Whole plant	Used in acute indigestive conditions of animals (Afaryu)
<i>Vitis carnososa</i> (vitaceae)	Amlaparni	Khatakha-tumbo	Leaves	Used in back pain and strain in oxen (Kandh aavi)
<i>Vogelia indica</i> (plumbagineae)	Rakta chitraka	Pavai	Whole plant	Ash is used in ulcers and warts
<i>Woodfordia flori-bunda</i> (lythraceae)	Dhataki	Dhavadi	Leaves	In bleeding ulcers and abrasions or internal bleeding used with Avartaki(<i>Helicteris isora</i>) 1 part and Dhataki(<i>woodfordia fruticosa</i>) 4 part decoction.
<i>Zyzyphus jujube</i> (rhamnace)	Badara	Bora	Barka and leaves	Decoction of bark and leaves with butter for allergic reactions in cows and buffaloes, food for animals
<i>Zyzyphus numularia</i> (lythraceae)	Chanibor	Sukshmaphala	Leaves	Galactagogue for animals
<i>Zyzyphus xylopyrus</i> (lythraceae)	Ghota	Gut bordi	Leaves fruits	Food for animals

Table 3. Classical plants:

Sanskrit name	Latin name	Family	Local name
Agnimantha	<i>Clerodendrum phlomidis</i>	Verbenaceae	Arani
Ahimsra	<i>Capparis sepiaria</i>	Capparidaceae	Kanthari
Amlaparni	<i>Vitis carnososa</i>	Vitaceae	Khata-khatumbo
Arishtaka	<i>Sapindus trifolius</i>	Sapindaceae	Aritha
Avartaki,	<i>Cassia auriculata</i>	Caesalpiniaceae	Aaval
Avartaki, mruga-shrungi	<i>Helicteres isora</i>	Sterculiaceae	Marda-shingi
Babula	<i>Acacia arabica</i>	Mimosaceae.	Bavala
Badara	<i>Zyzyphus jujuba</i>	Rhamnace	Bora
Bhumibala	<i>Sida humilis</i>	Malvaceae	Bhonya-bala
Bibhitaka	<i>Terminalia bellirica</i>	Combrataceae	Baheda
Bijaka	<i>Pterocarpus marsupium</i>	Fabaceae	Biyo
Chamar dudheli	<i>Daemia extensa</i>	Asclepiadaceae	Yugma-phala
Chanibor	<i>Zyzyphus numularia</i>	Rhamnace	Sukshma-phala
Chincha	<i>Tamarindus indica</i>	Caesalpinioideae	Amli
Chitraka	<i>Plumbago zeylanica</i>	Plumbagineae	Chitro
Dhanvana	<i>Grewia tiliaefolia</i>	Tilliaceae	Dhramana
Dhanvayasa	<i>Fagonia arebica</i>	Zygophyllaceae	Dhamaso
Dhataki	<i>Woodfordia floribunda</i>	Lythraceae	Dhavadi
Dhaturo	<i>Datura metel</i>	Solanaceae	Dhaturo
Dhaval	<i>Sterculia urens</i>	Sterculiaceae	Kadayo
Ekavira	<i>Bridelia retusa</i>	Euphorbiaceae	Ekala-kanto
Ekharo	<i>Hygrophilla spinosa</i>	Acanthaceae	Kokilaksha
Ghiteli	<i>Premna herbaceae</i>	Verbenaceae	Bhumi-jambuka

Ghota	<i>Zyzyphus xylopyrus</i>	Rhamnaceae	Gut bordi
Gokshura	<i>Tribulus terrestris</i>	Zygophyllaceae	Gokharu
Goraksha-phalini,	<i>Cyamopsis tetragonoloba</i>	Fabaceae	Guvar
Guggulu	<i>Balsamodendron mukul</i>	Burseraceae	Gugal
Gunja	<i>Abrus precatorius</i>	Fabaceae	Chanothi
Ingudi	<i>Balanites roxburghii</i>	Simaroubaceae	Ingoriyo
Jayantika	<i>Sysbania aegyptiaca</i>	Fabaceae	Jayati
Jhavuka	<i>Tamarix gallica</i>	Tamaricaceae	Prans, zau
Kakadai, aindri	<i>Cucumis sativus</i>	Cucurbitaceae	Indramana
Kala klitaka	<i>Indigofera argentea</i>	Fabaceae	Jangali gali
Kantaka marisha	<i>Amaranthus spinosus</i>	Amaranthaceae	Kantalo dambho
Kantaki, swarnakshiri	<i>Argemone mexicana</i>	Papaveraceae	Darudi, satyanashi
Karanja	<i>Pongamia pinnata</i>	Fabaceae	Kanaji
Kasamarda	<i>Cassia occidentalis</i>	Caesalpiniaceae.	Kasundro
Khadagashimbi	<i>Canavalia ensiformis</i>	Fabaceae	Taravaradi
Kuberakshi	<i>Caesalpinia bonducella</i>	Caesalpiniaceae.	Kakacha
Kukunder	<i>Blumea lacera</i>	Compositae	Kapurio
Laghunili	<i>Indigofera cordifolia</i>	Fabaceae	Daliyo
Lamajjaka	<i>Andropogon laniger</i>	Poaceae	Ashakhara
Languli	<i>Gloriosa superba</i>	Liliaceae	Dudhio vachhanag
Latakhadira	<i>Acacia pennata</i>	Mimosaceae	Khervela
Madhavi	<i>Hiptage madablota</i>	Malpighiaceae	Madhavi
Madhumalati	<i>Dregea volubilis</i>	Asclepiadaceae	Moti dodi
Mahachuncha	<i>Corchorus olitorius</i>	Tilliaceae	Chhunchh
Mahanimba	<i>Melia azedarach</i>	Meliaceae	Bakan limado
Makushthaka	<i>Phaseolus aconitifolius</i>	Fabaceae	Math
Manjarika	<i>Digera arvensis</i>	Amaranthaceae	Kanajo
Nadihingu	<i>Gardenia gummifera</i>	Rubiaceae	Malan, dikamali
Nala	<i>Phragmites karka</i>	Poaceae	Nali, naairi
Nimba	<i>Azadirachta indica</i>	Meliaceae	Limado
Okharadi	<i>Molluga hirta</i>	Aizoaceae	Mitho okharad
Paribhadra	<i>Erythrina suberosa</i>	Fabaceae	Jagariyo khakharo
Patalgarudi	<i>Cocculus hirsutus</i>	Menispermaceae	Vevdi
Phanjika	<i>Rivea hypocrateriformis</i>	Convolvulaceae	Fanga
Pitakanchana	<i>Bauhinia tomentosa</i>	Caesalpiniaceae.	Pilo asondaro
Prabhadraka	<i>Erythrina indica</i>	Fabaceae	Panderavo
Prushniparni	<i>Uraria picta</i>	Fabaceae	Pithavan
Puga	<i>Areca catechu</i>	Palmaceae	Sopari
Punarnava	<i>Boerhavia verticillata</i>	Nyctaginaceae	Punarnava
Rakta chitraka	<i>Vogelia indica</i>	Plumbagineae	Pavai
Rudanti	<i>Cressa cretica</i>	Convolvulaceae.	Padiyo
Saradru	<i>Terminalia tomentosa</i>	Combretaceae	Sajad
Shalmali	<i>Bombax malabaricum</i>	Bombacaceae.	Shimalo
Shami	<i>Prosopis spicigera</i>	Mimosaceae.	Khijado
Sharapunkha	<i>Tephrosia purpurea</i>	Fabaceae	Safonka, ghodakan
Shatavari	<i>Asparagus racemosa</i>	Asparagaceae	Shatavari
Siddheshwara	<i>Poinciana elata</i>	Caesalpiniaceae.	Sandhesaro
Silarumba	<i>Canna indica</i>	Cannaceae	Akkalber

Tikta koshataki	<i>Luffa acutangula</i>	Cucurbitaceae	Kadavi ghisodi
Tripakshi	<i>Coldenia procumbens</i>	Boraginaceae	Basariyo okharad
Udumbara	<i>Ficus glomerata</i>	Moraceae	Umbaro
Utkantaka	<i>Echinops echinatus</i>	Asteraceae	Utkanta
Vansha	<i>Bambusa arundinaceae</i>	Poaceae	Vaans
Vanya jiraka	<i>Vernornia anthelmintica</i>	Compositae	Kalijiri
Varshabhu	<i>Trianthema monogyna</i>	Aizoaceae	Satodo
Vatsapriya	<i>Commelina nudiflora</i>	Commelinaceae	Shishamuliyu
Vidarikanda	<i>Pueraria tuberosa</i>	Fabaceae	Khakharvel
Virataru	<i>Dichrostachys cinerea</i>	Mimosaceae.	Marudha
Yavasa	<i>Alhagi camalorum</i>	Fabaceae	Javaso
Zilla	<i>Indigofera paucifolia</i>	Fabaceae	Ziladi
Zingini	<i>Odina wodier</i>	Anacardiaceae	Mavedi
Zinzirita	<i>Truimfetta rhomboida</i>	Tilliaceae	Zipti

Table 4 - Non – Ayurvedic plants

Local name	Latin name	Family	Part used
Umdo	<i>Polyalthia cerasoides</i>	Annonaceae	Bark, leaves
Talavani	<i>Cleoma simpliciaefolia</i>	Capparadeae	Whole plant
Hemkand	<i>Maerua arenaria</i>	Capparadeae	Whole plant
Lodri	<i>Flacourtia sepiaria</i>	Capparadeae	Leaves
Lavadiyu, okharad	<i>Berginia odorata</i>	Elatineae	Leaves
Adariya	<i>Pavonia glechomifolia</i>	Malvaceae	Whole plant
Karandiyu	<i>Pevonia ceratocarpa</i>	Malvaceae	Whole plant
Tali	<i>Hibiscus solandra</i>	Malvaceae	Whole plant
Bahufali	<i>Corcus anticoliis</i>	Tilliaceae	Whole plant
Gandovelo	<i>Vitis repanda</i>	Vitaceae	Leaves
Adadiyo	<i>Heylandia letibrosa</i>	Fabaceae	Whole plant
Ranamethi	<i>Crotolaria medicagina</i>	Leguminaceae	Whole plant
Moto bhakho	<i>Lotus garcini</i>	Fabaceae	Whole plant
Rati methi	<i>Indigofera trifoliata</i>	Fabaceae	Whole plant
Jangali gali	<i>Indigofera trita</i>	Fabaceae	Whole plant
Sameravo	<i>Alicicarpus vaginalis</i>	Fabaceae	Whole plant
Moto sameravo	<i>Alicicarpus longifolius</i>	Fabaceae	Whole plant
Ruchhalo pandadio	<i>Desmodium laxiflorum</i>	Fabaceae	Whole plant
Zinko pandadio	<i>Desmodium triflorum</i>	Fabaceae	Whole plant
Runchhali valiyo velo	<i>Teramnus labialis mollis</i>	Fabaceae	Whole plant
Jagariyo khakharo	<i>Erythrina suberosa</i>	Fabaceae	Root, bark
Runchhalo fagiyo	<i>Rhynchosia viscosa</i>	Fabaceae	Root
Rambaval	<i>Parkinsonia aculeata</i>	Fabaceae	Leaves, fruits
Chamediyu	<i>Cassia pumila</i>	Fabaceae	Whole plant
Marudha	<i>Dichrostachys cinerea</i>	Fabaceae	Whole plant
Chatro baval	<i>Acacia planifrons</i>	Fabaceae	Leaves, flowers
Khervela	<i>Acacia pinnata</i>	Fabaceae	Bark

Pilo agiyo	<i>Vahlia voscosa</i>	Saxifragaceae	Leaves
Dariyai shankhalo	<i>Hydrophylex maritima</i>	Rubiaceae	Whole plant
Chanchadmari	<i>Bluemia wightiana</i>	Compositae	Whole plant
Sonasali	<i>Vicoa auriculata</i>	Compositae	Whole plant
Pili badakadi	<i>Siegesbbekia orientalis</i>	Compositae	Whole plant
Samara kokadi	<i>Bidense pilosa</i>	Compositae	Whole plant
Bethu fusiuru	<i>Tricholepis radicans</i>	Compositae	Seeds
Dudhali sonaki	<i>Soncus oliraceous</i>	Compositae	Whole plant
Jangali tal	<i>Sesamum laciniatum</i>	Pidalineeae	Whole plant
Avachi bavachi	<i>Moschosma polystachium</i>	Labiataeae	Leaves
Jangaliu lavender	<i>Lavendula burmanni</i>	Labiataeae	Root barks
Jenjvo	<i>Andrpogon ischedemum</i>	Gramineae	Whole plant
Lampado	<i>Andrpogon hystericula</i>	Gramineae	Whole plant

Table: 5 Family wise classification of plants

Family	No of plants	Total
Acanthaceae, anacardiaceae, annonaceae, Asparagaceae, Bombacaceae, boraginaceae, burseraceae, cannaceae, commelinaceae, Elatineae, euphorbiaceae, Flacourtiaceae, liliaceae, lythraceae, Malpighiaceae, menispermaceae, moraceae, Nyctaginaceae, palmaceae, papaveraceae, pedaliaceae, sapindaceae, saxifragaceae, simaroubaceae, solanaceae, tamaricaceae	1	26
Aizoaceae, amaranthaceae, asclepiadaceae, combrataceae, convolvulaceae, cucurbitaceae, lamiaceae, meliaceae, plumbagineae, rubiaceae, sterculiaceae, verbenaceae, vitaceae, zygophyllaceae	2	28
asteraceae, Capparidaceae, rhamnae	3	9
Malvaceae, Tilliaceae	4	8
Mimosaceae, poaceae	5	10
Compositae	6	6
Caesalpinioideae	7	7
Fabaceae	28	28

The plants are arranged alphabetically with details of claims practical plant users of the concerned area especially for diseases in the cattle. For the treatment of various disease in animal viz, Wound healing (22), Ulcer healing (19), Diarrhoea (6), Allergic conditions (6), Urticaria specially in camel(4), Placental expulsion (4), Warts (2) etc. Plants used as anthelminitic (12), fodder (34), galactagogue (23) are also reported. Some of the diseases are tabulated below.

Table: 6 Diseases and other conditions in animals and plants used

Disease	Plants used	Disease	Plants used
Fodder	34	back pain of oxen(kandh)	3
Galactagogue	23	Pinus	3
wound healing	22	Kamedo(disease of horn in oxen)	3
ulcer healing	19	Warts	3
Anthelmintic	12	lice killing	2
wound maggots	6	muscular pain	2
allergic reaction(Shili)	6	Acute indigestion conditions	2
Diarrhoea	6	Oedema	1
Disinfectant	6	Chest pain	1
Indigestion(Aadhmana)	5	killing animal	1
placenta removal	4	facial palsy	1
urticaria(Khas) of camlin	4	eye infections	1

CONCLUSION

Amongst the claims 82 plants were found reported in Ayurvedic classics or texts whereas 40 plants are non classical plants which are commonly growing in Barda region. It appears that majority of claims are recorded for wounds and used as fodder. Next to the wound healing agents; most number of plants are galactagogue. The claims for *Cassia auriculata* and *Terminalia tomentosa* is recorded for helping the conception require special attention for their use even in human beings. *Plumbago zeylanica* is employed for removing warts which can be studied for its anti-viral activities. A critical analysis of ethnoveterinary data of Barda hills clearly indicates that newer activity was reported for the classical drugs besides several non classical drug claims. The research carried out initially in the cattle with *Leptidenia reticulata* (Jeevanti) and after recording successful result the same drug is suggested for improving lactation in human beings. A well planned experimental and clinical evaluation from such plants may be utilized to produce a proper scientific validation for their application in the management of human diseases also.

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