

TRADITIONAL VETERINARY MEDICINE IN NEPAL



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**TRADITIONAL VETERINARY MEDICINE
IN
NEPAL**

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FOREWORD

This is an updated edition of Traditional Veterinary Medicine, Nepal. The first report was brought out in 1984 as FAO/RADA publication by the same investigator.

Animal health is a major concern for the small farmers of Nepal. In general, animal health and nutritional status are rather very poor in Nepal. A large population of unproductive animals along with lack of pasture grazing land have compounded the problems facing the basic animal health care delivery system.

Ever since the human life started in this earth, disease and death co-existed with him and with his animals. Therefore, efforts have been made to get relief out of it using herbs in various forms as a medicine from the very beginning of the human civilization. From the time immemorial the traditional system of medicine was being practised in Nepal. Most of the traditional practitioners are not trained and the practices which came down from generation to generation had, in fact, become a culture in socio-economic life of the people in this country.

Traditional veterinary medicines are the least expensive, can be locally prepared and traditionally rooted in the lifestyle of the people. It should be decided to support them so that some positive steps be taken up into an integrated approach with other modern veterinary services.

This is the second approach to gather information on indigenous veterinary medicine which was initiated by Dr. D.D. Joshi. The principal investigator is also to make recommendations for future development so that hundreds of thousands of small farmers could be benefited more from this system.

This report presents the findings and a brief overall analysis of the data collected through this survey study. The number and types of traditional veterinary practitioners or their training and methods of training, information about the availability and use of herbs, minerals and other indigenous products are compiled and tabulated in separate chapters.

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TRADITIONAL VETERINARY MEDICINE IN NEPAL

1. Introduction:

Traditional (Indigenous) means something which is communicated from ancestors to descending; only by oral means. Thus the knowledge of traditional medicine both for man and animal is handed down from one generation to another through practical demonstrations or through oral communications. Ever since the life started on the earth, diseases and death coexisted with him and with their animals. Therefore efforts have been made to get relief out of it by using herbs in various forms as medicine from the very beginning of human civilization.

From time immemorial the traditional system of medicine was being practised in Nepal. This system mostly depends on the availability of suitable local herbal drugs and medicines which brings the advantage to the people and their animals living in the country. This traditional practices which came down from generation to generation had, infact, become a culture in the socio-economic life of the people of this country.

It is well known to all that the indigenous medicinal plant products were in practices even before Gautam Budha for treatment of animal in Nepal. In Vedas the use of indigenous drugs in veterinary medicine is also mentioned. In India this type of herbal medicines started to be used during 1200 B.C. During the period of Asoka herbal medicines were in use for the treatment of animals. It has been also described in Rigveda about animal diseases and their cure through Himalayan herbal drugs.

This practice of curing diseases through herbal plant is still used by many veterinarians, medical officers, Ayurvedic physicians and local vaidyas. Therefore the practice of using herbal medicine for human and animals has remained for a long time. At present, due to introduction of the Western drugs, or allopathic drugs, like antibiotics and sulpha-drugs, there is a great set-back of herbal medicines all over the world.

Nepal is situated in the lap of the Himalayas occupying one-third of their total length. It has an exhaustless hidden treasure of valuable herbal medicinal plants which may be considered as a natural gift for the people of the Nepal. Since very long time, people of all economic strata have using a great number of the plants traditionally according to Ayurvedic, Homeopathic and Baidangi concepts to get rid of their own and their animals complaints. In this indigenous system of medicine there are large number of drugs of plant origin which have recognised in the treatment of various animals and human diseases and have remained as the main source of veterinary and medical reliefs. The great majority of the people of this country are

inclined to the system in which drugs are mostly in their crude forms. Most of the methods of treatment and the drugs used in traditional veterinary medicine are not explainable for their effectiveness at the present stage of our knowledge.

The rationale use of drugs in the diagnosis, prophylaxis and treatment depends upon the knowledge of their desired action. Every system of medicine has its own advantages and shortcomings. The users and practitioners of the traditional system obviously would be happy to find the medicine, herb and drug locally available to them for their advantage. All the traditional medicines would eventually be given a trial as to their effectiveness, low toxicity, and quick availability. There is a great need of scientific approach, research, and authoritative interpretation of the underlying veterinary medical philosophy and practices behind the traditional system of veterinary medicine.

2. Background:

In Nepal the medical and veterinary systems are modern western medicine (allopathic medicine) homiopathy, Ayurvedic medicine, Tibetan medicine, unani medicine and traditional fait healing. The last four systems are grouped together and connoted as traditional veterinary and medical systems which is at present, generally represented by Ayurvedic veterinary/medical medicine. It is to note that the modern (allopathic) medicine was introduced in the country only at the turn of this century whereas the traditional medicine one has been existing since a long time ago and had already started its primary development activities in the country. Crude herbs and drugs are crucial in the treatment of diseases to human being as well as animals in Nepal.

In Nepal traditional veterinary and human medicines are still is use in various forms especially under Ayurvedic system. Herbal medicinal plants used to those medicine have reference under local names. Standard names of the plants are to be sought in Sanskrit language. It is not uncommon for a medicinal plant to have different local names in Nepal.

Drugs for animal uses are made available in the country by acquiring from three channels, namely internal production, importation and donation. Proportionate share of each channel and each system of medicine in the total supply is not known. Non is known about the ratio between modern veterinary medicine and traditional veterinary medicines. His Majesty's Government concerned Ministries, semi-government institutions, private companies, foreign manufacturers' representatives, non-governmental organizations, and foreign doners of diversified sources and origins are found involved in acquiring the supplies of modern as well as to some extent traditional herbal veterinary medicines in the country.

According to the government animal health policy it is to provide free primary veterinary care. However, it has been observed that on the pharmaceutical distribution in rural Nepal showed that the free veterinary care is misleading. Because the people are paying many times more than what they get free.

3 Survey Design and Sampling:

This report was updated this time and also covered three more new districts' information in it. The ultimate objectives of this survey study was to know the number and types of traditional veterinary practitioners in the country, their training and methods of treatments, name of drugs-herbs, minerals and other indigenous products which are used by them, and assess their participation in rural development. Also this study aims to make the recommendations to maximise the coordination and cooperation between traditional and modern medicines.

It was obviously impossible to collect all information from all the districts of the country within short period of time. Because we were interested in the overall system of animal treatment prevailing in the country, we selected the following municipality and villages of eight districts of the kingdom, which could give us the information on use of traditional system of treatment. The selected representative districts are as follows: Three are from Kathmandu valley, two from mid hill area, Kaski and Tanhu, other two from northern remote Himalayan district, Darchula and Mustang and the last from plain (Terai) district, Rupendehi.

Sample Districts and Municipality

Name of the Districts	Name of Municipality and Village
1. Kathmandu	Kathmandu Municipality
2. Lalitpur	Lalitpur Municipality
3. Bhaktpur	Bhaktpur Municipality
4. Kaski	Pokhara Municipality Deorali Village Rupakot Village
5. Tanhu	Jamune Bhanjyang Village Bar bhanjyang Village Bhanu Village
6. Rupendehi	Sidharth Nagar Municipality
7. Darchula	Khalanga Village
8. Mustang	Jhomsom Village

Questionnaires and format were developed (See Annex I, II, III, IV and V). This time two survey staffs were recruited and given survey training on how to do survey, the objectives of the survey and compilation of data after completion of field survey. Team of two staff were sent to the above mentioned new districts and village for one month period of time. Informations were gathered from traditional practitioners, village leaders, government officials working in that area, local drug stores, veterinarians, pharmaceuticals, Nepal Royal Drugs Ltd., Herbal production and processing Co. and many others of the survey areas.

4. Findings:

This report presents the updated findings with some more districts coverage and field survey data, herbal plants pictures and their general uses with current producers of herbal medicines.

Besides modern veterinary practitioners, there are main 10 types of traditional healers serving rural people and treating their sick animals in Nepal.

Except few of them, most of these types of medicinal practices are economically feasible, socially, culturally acceptable and utilise locally available indigenous resources. The main constraints of indigenous veterinary medicine are: mostly they are in crude form of herbal medicine, no knowledge of actual efficacy and no scientific background on authenticity in their lines of treatment.

One of the most interesting findings from this survey is that all farmers go to the traditional veterinary practitioner for their first consultation when their animal gets ill. As one would expect the prevalence of traditional medicine, almost 80%-85% of farmers go to baidangi and others. In this study it has been clearly observed that almost in every village, Municipality, there exist at least two or three types of traditional practitioners providing the services to the people. Farmers go to the veterinary hospital, veterinary dispensary, livestock and veterinary development centres for their second consultations. Multiple consultations, however, is very much the rule in the event of illness. But in many places of the country there is a lack of modern veterinary services facilities provided by His Majesty's Government, Ministry of Agriculture, Department of Livestock Development and Animal Health. Therefore, farmers have no alternate choice except consulting the locally available traditional practitioners.

4.1 Traditional and Modern Pharmaceutical Development

Internal production of both the modern and traditional systems of veterinary medicine is found using imported capital goods and raw materials. Because the raw materials required for the production of modern (allopathic) ones are not simple herbs, metals and metallic compounds as those required for that of traditional (Ayurvedic) one.

Along with animal health as well as human health policies and legal instruments, like the Drug Act (1978) to regulate, there are four ministries of HMG/N that are involved in one way or other of the implementation of pharmaceutical development in the country. These are Ministry of Health, Ministry of Forest and Soil Conservation, Ministry of Industries and Ministry of Agriculture. The Ministry of Health is responsible for the supply of human allopathic and Ayurvedic drugs, the regulation and administration of drugs legislation through the Department of Drug Administration, and the production of Ayurvedic preparations (through Singh Darbar Vaidhya Khana). The Ministry of Forest and Soil Conservation, the pioneering body for the development of pharmaceuticals in the country, is responsible for the operation of Royal Drug Research Laboratory (RDRL)-the body identified by the Drug Act as the legal agency for the regulation of all kinds of testing, analysis, standardisation, quality control, and research in the field of pharmaceutical development. This ministry is also responsible for the operation and supervision of herbs processing and herbal cultivation, for the commercial cultivation and production of herbal material. The Ministry of Industries, the regulating authority for the public and private industries, is responsible for the production of allopathic drugs through the Royal Drugs Ltd. (RDL)-the government undertaking. To coordinate the implementation and operation and also to design the policies on administration and technical affairs there are, as arranged in the Drug Act, the advisory bodies, like Drug Development Council and Technical Advisory Board, represented in the both by the ministries, operating agencies, generators, producers, distributors and users. Whereas the Ministry of Agriculture is the responsible body to look after the animal health and allied vaccine production and carries out its duties through the Department of Livestock Services, Veterinary Hospitals, Service Centres and Sub-centres.

In veterinary products the HMG/N agencies under the Ministry of Agriculture is manufacturing some of the important animal vaccines. In addition to these establishments for the production of end products, there is one more government company, which under the umbrella of Ministry of Forest and Soil Conservation, is cultivating and converting medicinal herbs into secondary intermediate products for home consumption and export market. How these companies and government agencies under the different umbrellas are performing economically in the transformation or conversion processes, is not yet clear.

In respect to promotional and support resources, the general weakness of the country in technological information at the entrepreneurial level for making decision on options extends also to this subsector.

Furthermore the a imported products are mostly from the nation having advantages of the mass production of overwhelming superiority in the industrial capacity. In other words, home industries of any size in the pharmaceuticals are to face the difficulties of competition with external products, and without adequate protection they are doomed to be failure in a situation of small market of the country.

4.2 Scope of the Indigenous Resources:

If managed systematically with a priority programme approach there are some opportunities in the country to exploit in a manner to contribute from the indigenous resources for the pharmaceutical development to the national development objectives and goals. Proper utilization/mobilization of existing trained, skilled and semi-skilled manpower resources of such knowledge and skills is a must for the upliftment of social, economical, technological and scientific affairs of the pharmaceutical development in the country.

The second set of opportunities relates to optimum utilization of physical based indigenous resources for the internal production of pharmaceutical intermediates for veterinary medicine.

The third scope of opportunities is related to the basic veterinary medical and pharmaceutical researches. The researches should have the understanding of those diagnosis and treatment principles and traditional medicines that have special niches for curing specific diseases in the traditional systems of veterinary medicine, the understanding of the inherited empirical relationship of diseases and society may be some that will help the traditional system of veterinary medicine to meet with modern principles of science and technology to protect and to promote their values. There is another consideration that to mobilise international participation and involvement in the developing country's efforts in the development of traditional veterinary pharmaceutical researches.

4.3 The Use of Medicinal Plants in Veterinary Practices:

The use of medicinal plants in veterinary practices, here in Nepal, is getting more popularity. This is because of two reasons: one there is a traditional practices of using herbal plants as a medicine and seconds there are now number of

veterinary products produced from medicinal herbs which are produced within the country as well as produced in India and imported. These drugs are available in the market in drug stores and also to some extent supplied by HMG/N Department of Livestock Services through veterinary hospitals, centres and sub-centres located in all 75 districts of the country.

It is fact that modern researches have shown that the action of medicinal plants is due to a relatively small number of constituents - called the active principles - produced by the plant. It is true that for certain uses (e.g. parenteral injection) the active principles or a very carefully prepared extract is more useful than the drug itself. In popular traditional veterinary medicine we have the advantage of using the entire plant or one or other of its organs.

It is necessary to know something about their active constituents and the effectiveness of these, in order to understand the uses of medicinal plants and their mode of action

The active principles presents in a plant are very variable in amount and quantity this could be because of either plant grown in a unfavourable climate and soil which may have lower or absent of active principle or plant grown in a proper condition may have higher amount of active principles of drugs.

4.4 Cultivation of Medicinal (Herbal) Plants:

Most of the medicinal plants found in Nepal are indigenious and popular. These are cultivated either in the gardens, or farms or in the jungle (forest). In order to capitalise and commercialise them one has to grow commercially in the farms. Although there is a opinion that cultivated herbal plants are less active than those collected from their natural habitats. So far the medical knowledge and research findings about the efficacy do not accept this opinion and rather it is entirely false. Herbal research studies carried out in Nepal by the research laboratory of the Department of Medicinal plant, and herbal company, also in India, Sri Lanka, Thailand and many other countries of Europe have shown that cultivated plants are at least as active as the wild plants if they have been grown from good seed, sown or planted in suitable soil and grown in favourable climate. While cultivating the medicinal plants one has to consider very carefully on the following factors:

- a. Cultivation of such plant races with high content of active principles,
- b. Soil selection for cultivation or plants cultivation on the basis of the type of soil needed
- c. Fertilizers in the soil influence the amount of active principles of each plant

- d. Climate is also an important factor. The highest contents of active constituents are generally obtained in plants that are cultivated under conditions that approximate to their natural habitats.
- e. Cultivated and collected in the alpine and mountains are more efficacious than those coming from lower altitudes. The herbal plants grown wild in nature up in the Himalayas are very famous, not only in the South east Asian countries but also getting popularity in western countries. This is because of having greater efficacy in the active principles of the plants. However, so far no developmental plan has been formulated to explore this important field of science, and
- f. Light can play a primordial part, as for example: Bella done plant collected from a sunny place contains more alkaloids than if grown in the shade.

4.5 Collection, Conservation and Drying of Medicinal Plants:

4.5.1 Collection:

It must be recognised that the time of collection or harvesting the plants materials markedly influences the amount of active constituents present in the drug. In many cases it has been observed that leaves accumulate active principles before the sun rises and these principles will be reduced during the following period, herbs should thus be collected at that time. Belladonna or thorn apple are richer in active principles in the morning and than in the evening. Medicinal plants should not be collected in rainy day or wet day nor at times when they are still covered with forest dew.

4.5.2 Conservation:

Conservation of fresh herbal plants or parts of plants is generally achieved by drying, then they can be used throughout the year.

4.5.3 Drying:

It is of prime importance to dry the plants as soon as possible after collection in order to avoid changes that may occur, especially in the active principles. Drying. can be done by two methods:

- a. Sun drying which is only possible in hot, dry climate but not in wet and humid climate. It is often said that drying -should be carried out in the shade instead of directly under sunlight.

- b. Using driers employed for fruits and vegetables, in which case the temperature must be carefully regulated. Herbal plants containing volatile oils must be dried between 20 degree centigrade to 40 degree centigrade. Whereas others between 15 degree centigrade to 80 degree centigrade. It is important to spread the plants in thin layers without any overlaying of different parts. Before drying it is desirable to separate leaves and flowers from other unwanted plant members such as stems, which would slow down the process of drying.

4.6 Types of Traditional veterinary Practitioners and Their Training and Method of Training:

The following are the list of types of traditional veterinary practitioners:

- 4.1 Ayurvedic or Ayurvoda or Kaviraj or Vaidya
- 4.2 Homeopathic or Homeopath
- 4.3 Unini
- 4.4 Sidha
- 4.5 Yoga
- 4.6 Dhama
- 4.7 Jhankri or Jhakri
- 4.8 Jyotishi or Joshi game or Joshi herane
- 4.9 Baniya
- 4.10 Lama
- 4.11 Pichasini or Pichas or Boksini
- 4.12 Sudini or Sudhini or traditional midwife
- 4.13 Baidhangi or Baidya
- 4.14 Tantirik and Mantrik (Tantra, Jantar and Mantra)

Their Training

Methods of Treatment

4.1 Ayurvedic or Ayurveda or Kaviraj or Vaidya

4.1.1 Mostly by government institutions within the country and outside the country, particularly in India

4.1.2 The basis of the treatment and diagnosis in animals is also according to Ayurvedic system to which "Bayu" "Bitta" and "cough" are the three factors whose imbalance in the animal body results in disease. Treatment can be by simple plant herbal drug or preparations from expensive metals and precious stones. This is a widely recognised system of treatment of both in animals and human. This is the first systematic utilization of herbal plants for animal ailments and it has a very good reputation in the line of treatment. But this system of treatment was generally centralised in main district headquarters and town panchayat areas, because the well trained experienced Ayurved practitioners (well reputed for human treatment mostly) generally stayed in the town panchayat areas. They are trained only for the treatment of human ailments and not for veterinary medicine but due to the same concept of traditional medicinal system they apply in animals with different doses which give very good effect on animal disease treatment. Therefore, people believe in this. Thus, farmers who are near or in the municipalities are benefited by experienced Ayurved people. Medicinal herbs/plants, which are used in this system, are listed in separate chapter.

4.2 Homeopathic or Homeopath

4.2.1 Mostly by governmental institution outside the country particularly in India and few by personnel contact, reading, correspondence and experiences.

4.2.2 This is not very much popular practised now in Nepal for animal treatment. But homeopathic medicines and treatment of domestic animals was the first introduction of animal treatment system officially in Nepal during the beginning of Rana Regime. The source of homeopathic medicines are herbal plants, animal products and minerals and nosodes also. The basis of treatment and diagnosis in animals are according to homeopathic principles and system. "psora, psychosis and syphilis" (as is in Ayurvedic, vauyu, pitta and caught) are the miasmatic factors- of animal diseases in Homeopathic system. Homeopathic is essentially not many sided but all sided. This system investigates their action in healthy and sick animals. The principle doctrine of this science is "similia similibus curanture"

Late Dr. Khus Bahadur was the first Homeopathic as well as veterinary doctor who has introduced and practiced this system of treatment in veterinary hospital officially in Kathmandu, Nepal, during the Rana Regime in 1929 A.D.

4.3 Unani

4.3.1 They do not get training but by experiences and observation of the knowledge and practice handed down from generation to generation.

4.3.2 This system of treatment in animals is only practiced in Kathmandu valley and Biratnagar. Treatment can be Unani preparation of medicines along with herbal plants, minerals and natural therapy.

4.4 Sidha	4.4.1 No training but spirits and supernatural power and agents.	4.4.2 Sidha is famous by "Sidha Ba-Ba". They are not very common and only few Sidha located in different parts of Nepal such as in Doti-Khaptar Baba, Swargadwari baba in Peuthan, Chandan Baba in Jumla. Some Baba near and around the Lord Pasupati Nath Temple in Kathmandu. Few other Jogi Baba live in Matha of different districts of Nepal. They treat animals or advice owner of the sick animals by giving ash and few dried leaves or roots or fruits or herbs which have no any scientetific basis, and administer them with sacred water. Their treatments are based on dynamic or spiritual hypnotism.
4.5 Yoga	4.5.1 No training officially but trained themselves locally on Yoga practice.	4.5.2 This is not commonly practiced in animals treatment but few Yoga sutras are being applied and used to treat pet animals to give relief for few types of ailments. It is said that physiotherapy is the main basis of Yoga treatment in animals.
4.6 Dhami	4.6.1 No training but byexperience and alsoprofessional which came down from generation to generation as Dhami familyin the community	4.6.2 This is the most popular system of treatment of animals in the Nepalese society. About 85 % of the people and their animal population are served by this system occupy a major role in the animal health care of the country. They are really speaking psychatrics and hypnotics. This system has developed deep roots in our society. They use sometimes herbs and few known antibiotics because they have adjusted, themselves to the new system of veterinary medicine development. All dhamis treat animals on the following basis of diseases caused by:

4.6.2.1 Imaginative, unidenti-fied objects, ghost and witch. effect: Bhut, Pret, Boksi, Dhaini, Dhami asks to the owner to secrify youth goats and fowl for curing ailments of a sick animal.

4.6.2.2 Hunter disease: Which causes shooting pain like and arrow.

4.6.2.3 Nas kapat: Where they provide certain types of plants powder and bitters for causing diarrhoea to treat poisoning and indigestion.

4.6.2.4 Anger of gods and goddessess: Dhami asks to the owner to please your god and goddess (kul deveta) because he or she is angry.

4.6.2.5 Ganu Gola: Kind of tympany or gas formation in animals. This is treated by most Dhamis with massage and physical exercise by moving animal from place to place just remove gas from the intestine.

4.6.2.6 Dewa: is believed due to when animal enters into other agriculture field or vegetable gardens and eats crops and then that animal falls sick. Dhami treats that animal psychologically.

4.6.2.7 Kancho Bayu: A milking animal gets sick and blood comes in milk and also sometime in urine and stool. This has been brought about by the ghosts of people who have committed suicide or had unnatural death.

4.7 Jhankri or Jhakri

4.7.1. No training but by experience and gains from generation to generation in some family.

4.7.2 This is almost like Dhama system of treatment. This is popular in eastern part and central regions like Kathmandu valley and plain areas. The treatment of Jhakri is both psychological and hypnotics. Sometimes they also use some herbal medicine along with sacrificing goats or poultry or ducks. This is helpful in curing various types of animal ailments.

4.8 Jyotishi of Joshi
genre of Joshi herener

4.8.1 They get training in Nepal as well as in India. It is very scientific in mathematic calculations findings.

4.8.2 This system also occupies very important place in our society. A Jyotishi can differentiate the cause of illness such as bacteria, parasite, etc. or bad star planets of his or her fortune. If it is due to bacteria etc, they advise to treat their animals with the help of veterinarians or Ayurved or Homeopath or Baidangi etc. If it is due to bad star or fortune they advise to worship particular gods or goddess.

4.9 Baniya or Hadibuti
awshadhi pasale.

4.9.1 They do not get any training but sell the medicinal herbs and their preparation which they can identify just by experience from generation to generation.

4.9.2 This is practiced mostly in Kathmandu and also very few places in plain (Terai) town areas. They are mostly business people. They can use crude form of herbs and chemical originated from plants from Nepalese rural farmers. They prepare medicine (mixture, paste, ointment, pills, tablets, etc.) for different kinds of common diseases both for human and animal ailments. These Baniyas sell their preparations to the same rural farmers as well as to city people. The combination of medicine which they prepare and sell is very effective and acceptable to the society. It has a scientific basis, for treatment. But these Baniyas,

they never go to the patients or sick animals house. They do not observe or dignose the case. They simply sell the medicine on the verson of a person who comes to them to buy medicine.

4.10 Lama or Awtari Lama	4.10.1 They get training from the old experience in Awtari Lama. There is no such institutional type of training	4.10.2 This System of treatment is mostly practised in Bhote, Byansi, Humli, Jumli, Tamang, Monang and Thakli communities. It is Combination of Dhama and Jhankri. These Lamas go to the patients or sick animals house, diagnose the case and prescribe some herbal medicines along with some Tantra and Mantra. This is Very much practised in Himalayan and Mid-hill regions of the country.
4.11 Pinchashi or Pichas or Boksini	4.11.1 No training but only by experience and observation handed down from generation to generation.	4.11.2 This is done mostly by a woman pichasimi. This is the second most popular system of treatment of animals in Nepalese society after Dhama system. Ystem is exactly same as in Dhama and ihankri.
4.12 Sudini or Sudhini or Traditional mid-wife	4.12.1 They do not get any training officially but they learn by experience and observation working with experienced local Sudini.	4.12.2 These sudinis perform delivery of women as well as of animals. They do not treat any animals except helping in obstructive delivery of pregnant animals.
4.13 Baidhangi or Baidya	4.13.1 They get training locally with Ayurved kabi-raj and experienced Dhama. They get very limited knowledge of treatment. They are not much Trained in animal treatment side.	4.13.2 This Baidhangi system of treatment is a combination of Dhama and Ayurveda. They use mostly herbal medicine and sometimes also act like Dhama to remove unwanted, unidentified external objects, which cause ailments. They also began to use alopactic medicine like antibiotics and sulpha drugs.

4.14 Tantrik and Mantrik

4.14.1 They get training locally with some experienced Tantrik and also they read books on Tantra and Mantra.

4.14.2 In this system they use "Jantar" and "Mantars" to remove the evil spirit which is very common in our society. "Bhut Jharne" or offering sacrifices to please gods or planets and stars are commonly practised by our traditional veterinary medical workers. They use claws of bear, tiger, tusk of elephants, old silver or gold coins, thread with coral beads and other beads. They tie up round the neck of the animals or on the tail of the sick animals. This is a kind of psychosomatic methods of treatment in animals. Some time they ask the animal owner to sell the sick animal to low caste family to remove the evil spirit. This practice is more acceptable to the villagers because these types of practitioners live with them, eat their food, believe in the social cultural and religious background of the community and provided health care to both human and animal health.

5. Integration of Traditional System of Veterinary Medicine into the Modern Animal Health Service System

The problem of veterinary drug delivery system in Nepal is vast and inherently complex, and has placed serious limitations on the effectiveness of the entire animal health and livestock development programmes. This problem affects many person involved from managers of the animal health services system to the community animal health and extension leaders in the village municipality wards. Without veterinary medicine essential for basic animal health care it becomes increasingly difficult for animal health workers and personnels to win the confidence of animal owners and to pursue the greater task of preventive veterinary medicine through animal health education and extension.

Since it appears highly unlikely that there will be single ultimate solution to this problem, appropriate alternative need to be initiated and tested locally so that a basis may be established to proceed to the challenge of that task.

Development programme of local traditional veterinary medicine could be a modest start toward the development of local alternatives of animal health care delivery at the village level in Nepal. This concept of appropriate animal health technology has many precedents in Asia, like "barefoot veterinary doctors" in China. Any success of these development models undoubtedly must be attributed to how country specific they became to design and implementation.

Considering that traditional veterinary medicine is least expensive, can be locally prepared and this system of treatment is traditionally rooted in the life style of the people, His Majesty's Government of Nepal must decide to integrate this traditional system with modern veterinary medicine and develop two systems simultaneously rather than separately. A plan has to be formulated for training and extension so that traditional medicines are -effectively incorporated into the services by the modern veterinary dispensary and livestock development and veterinary sub-centres. If this kind of integrated approach could be implemented, it will help considerably in solving the problem of drug delivery mechanism in Nepal.

In countries like India, Bangladesh, Nepal, Sri Lanka, Thailand, Mongolia and Indonesia traditional system of medicine for primary health care is still widely used and practised. But in Nepal this system of veterinary medicine is not widely used and practised in an organised and scientific manner. Nepal should put up its efforts to promote and develop, and review traditional system of veterinary medicine (TSVM) according to country local needs. In doing so, arrangement of studies should be made in such a way that whatever is weak in the system it should be implemented and strengthened by strong points of other system or systems. This will lead to the application of modern tools and technologies for the full advantage and advancement of TSVM.

The traditional healers are not trained academically. The techniques and methods of their clinical practices are very much crude and have no scientific basis. Thus they should get a kind of short term *training courses* with the objectives to enable them to identify, collect and preserve approved medicinal plants. They should also be taught how to prepare simple decoctions, syrups and ointments using the approved medicinal plants, chemicals and local materials. They should further learn how to use these preparations safely and effectively as well as when their use should be avoided. Once found to be effective, this approach will go for a long way in solving the problem of lack of medicines for common animal illness in the remote and rural areas of the country.

6. Use of Herbs, Minerals and other Indigenous Products:

There are large number of herbal plants that are known to the local people as medicinal herbs. Many of them are used as medicine by our people in the country-side under the traditional method of curing the animal diseases.

Even after introductions of Allopathic medicines in the area, particularly in the countries of Himalayan range, the use of medicinal plants in veterinary medicine is still commonly practised. Indigenous medicines have been prepared from various herbs, roots, flowers, fruits, bark, whole plant, seeds, leaves, root bark, stem, minerals and extracts in different manners with different compositions and forms. These medicines have diverse uses such as stomachic and tonic powder, food supplement, astringent powder, cough powder, broad-range anthelmintic, inducing oestrus and ovulation and cleansing draught, antipyretic, anti-flatulent, galactagogue, sex stimulant tonic, antipruritic, antiseptic, blood purifier, and parasiticide.

From the survey study, some of the most commonly and widely grown medicinal plants, which are used for veterinary medicine in the Himalayas of Nepal are: *Acorus calamus*, *Aegle marmelo*, *Asafoetida*, *Aloes*, *Allium sativum*, *Berberies aristata*, *Brassica cerua*, *Butea monosperma*, *Butea frondosa*, *Betula utilis*, *Cassia utilis*, *Coriandrum sativum*, *Calotropis gigantea*, *Cinnamimum tamela*, *Datura metal*, *Dryopteris filix-mas*, *Embllica officinalis*, *Ephedra gerardians*, *Emberia ribes*, *Foeniculum vulgare*, *Holarrhena antidysenterica*, *Juniperus communis*, *Lyonia ovalifolia*, *Myricaesculenta*, *orchid latifolia*, *Potentilla fulgens*, *Picrorhiza scrophuaaria*, *Rauwolfia serpentina* Benthem Kurz, *Swertia chirata*, *Sapindus mukorossi* Gaerth, *Terminalia belerica*, *Terminalia chebula*, *Tinospara cordifolia*, *Valeriana wallichii*, *Viscum album* Linn, *Zanthoxylum armatum* and *Zingiber officinale*, (Upadhyay 1979, and Joshi 1979).

Nepal exports a number of crude plant drugs to several countries. Traditional veterinary medicinal plants are, therefore, an important natural resource of our country. Measures like conservation of rare species, systematic cultivation of economically profitable species and control of deforestation can greatly help increase this resource. This is the first of its kind of report that will deal with the salient features of veterinary medicinal plants of Nepal. Name of plants will appear in alphabetical order.

Abbreviations used in the report are: LN = Latin Name; F = Family; D = Distribution; CC = Chief Characteristics; TU = Therapeutic uses; PU = Parts Used; AP = Ayurvedic Preparations.

- LN - *Abutilon indicum*
 SN - Atibalaa
 NN - Atibalu
 F - Malvaceae
 D - Upto 1500 feet
 CC - Hairy, under shrub; much branched;
 leaves ovate; flowers yellow
 TU - Astringent, diuretic, demulcent,
 aphrodisiac (seeds), laxative,
 antipyretic TU(root)
 PU - Leaf, seed, root
 AP - Balaadi kvaath,
 Balaadighrita.



- LN - *Acorus calamus*
 SN - Vachaa
 NN - Bojho
 F - Araceae
 D - Up to 5500 feet
 CC - Aromatic herbs,
 3-5 feet high;
 leaves long,
 linear-lanceolate
 TU - Emetic, stomachic,
 carminative,
 tranquillizer;
 in dyspepsia, coli remittent fever,
 bronchitis PU - Rhizome

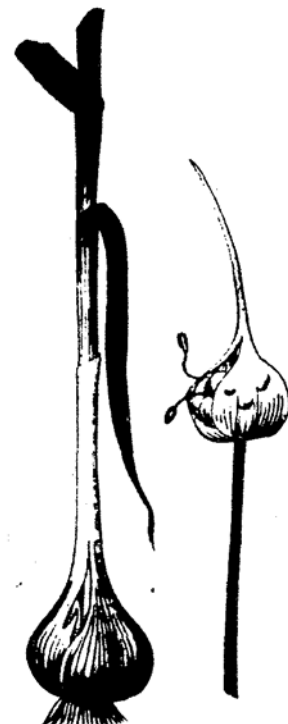
- AP - Saarashvata churna,
 Medhyarasaayana



- LA - *Aegle marmelos*
 SN - Bilwa
 NN - Bel
 F - Rutaceae
 D - Up to 4000 feet
 CC - Deciduous tree,
 20-25 feet in height
 and 3-4 feet in girth;
 leaves trifoliate,
 aromatic
 TU - Antipyretic,
 antihistaminic,
 antidiabetic,
 laxative,
 antidiarrhoeal;
 in rheumatism
 PU - Root-bark, leaf,
 ripe and unripe
 fruits
 AP - Dasamulaarista,
 Bilwaadichurna,
 Bilwapancha-kvaath.



- LN - *Allium sativum*
 LN - Rasona
 LN - Lahsun
 LN - Liliaceae
 LN - Up to 8000 feet
 LN - Parnail plant, compound bulb, composed of
 several partial bulbs, cloves
 TU - Hypertension, arterosclerosis, diarrhoea and
 detention and bronchial catarrh
 PU - Fresh bulb and dried bulb Rajhpravartani vati,
 AP - Kumaaryaasava.



LN - *Azadirachta indica*

SAN - Nimba

NN - Neem

F - Meliaceae

D - Up to 1500 feet

CC - Large evergreen tree; leaves simply pinnate, 9-15 leaflets

TU - Astringent, antiseptic, tonic, demulcent, stomachic, stimulant, antimalarial

PU - Bark, leaf, flower, seed, oil

AP - Nimbaadichurna, Nimbaarista



LN - *Bauhinia purpurea*

SN - Kovidaar

NN - Koiralo

F - Leguminosae

D - Up to 5500 feet

CC - Moderate sized tree; young parts grey pubescent, leaves broader than length, apex deeply notched; flowers purple

TU - antidiarrhoeal, carminative

PU - Bark, root, flower

AP - Kovidar churna



- LN - *Bergenia ligulata*
 SN - Paashaanabheda
 NN - Pashanbhed
 F - Saxifragaceae
 D - Up to 10000 feet
 CC - Perennial herb; leaves ovate or round, margin toothed, lower surface reddish; flowers white or pinkish
 TU - Antipyretic, diuretic, antidiarrhoeal, antiscorbutic, expectorant; in urinary calculus
 PU - Root
 AP - Paashaanabhedaadi kvaath



- LN - *Betula utilis*
 SN - Bhurjapatra
 NN - Bhojpatra
 F - Betulaceae
 D - Up to, 14000 feet
 CC - Tree; bark smooth, reddish-white paper like, peeling off in thin sheets; leaves alternate, ovate, serrated
 TU - Antiseptic, analgesic, antiepileptic, anticonvulsant, haemostatic, antidiarrhoeal
 PU - Bark
 AP - Bhurjapatra churna, Bhurjapatra kvaath



LN - *Cassia occidentalis*
 Sti - Kaasmarda
 NN - Kasaudi
 F - Leguminosae
 D - Up to 4500 feet
 CC - Erect stout herb;
 leaves ovate or
 ovate-oblong
 TU - Antipyretic,
 purgative,
 diuretic
 PU - Whole plant, seed
 AP - Kasmarda churna,
 Kasmarda kvaath



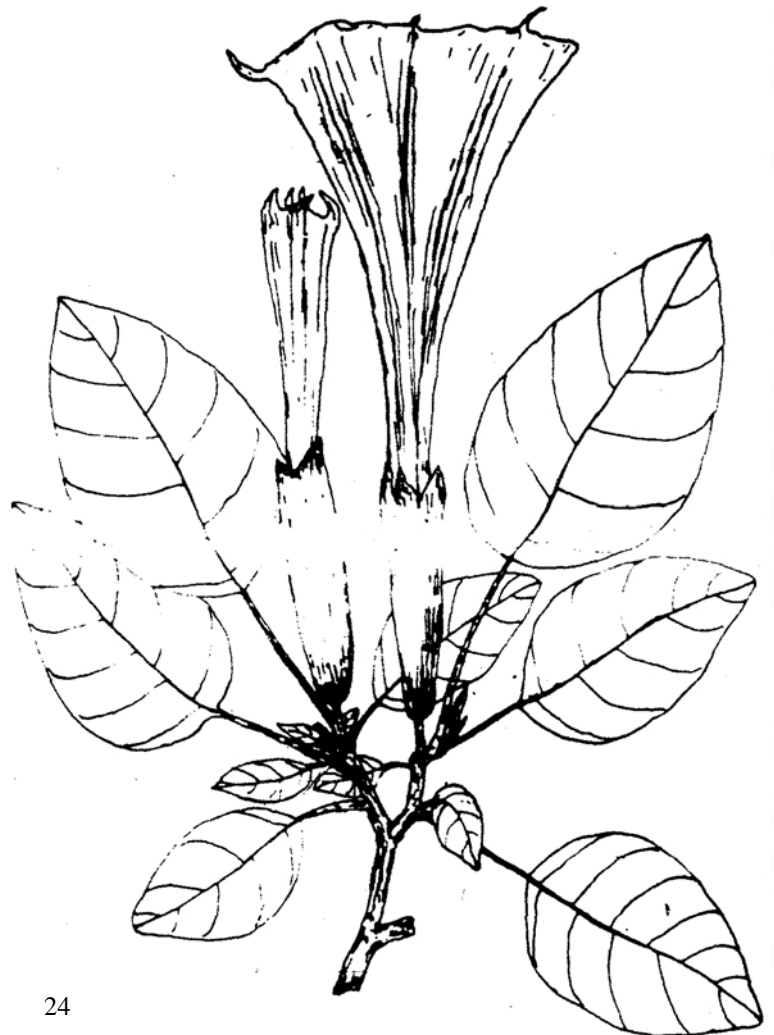
LN - *Cassia tora*
 SN - Chakramarda
 NN - Chakramandi, Taaper
 F - Leguminosae
 D - Up to 4000 feet
 CC - Annual shrub, leaves pinnate, leaflets oblong,
 membranous; flowers bright yellow; seeds
 light grey, cylindrical, oblique
 TU - Laxatives; in skin diseases, ringworm, wart,
 leprosy, snakebite
 PU - Seed, leaf, root
 AP - Dandrughni vati.



IN - Cedrus deodara
 SN - Deodaaru
 NN - Deodaar
 F - Pinaceae
 D - Up to 12000 feet
 CC - Tree; up to 250 feet in hight; trunk stout;
 bark grey and rough; leaves niddle like.
 TU - Diuretic, carminative, astringent,
 antidiarrhoeal antipyretic; in piles,
 PU - Heart-wood, oil
 AP - Deodaarvaadi churna, Deodaarvaadi
 kvaath



LN - Datura metel
 SN - Dhattur
 NN - Kaalo dhaturu
 F - Solanaceae
 D - Up to 6000 feet
 CC - Tall herb, stem
 blackish or whitish;
 leaves ovate
 lanceolate or
 broadly ovate;
 flowers funnel
 shaped; purple
 or white;
 seeds yellowish
 or brownish
 TU - Antispasmodic,
 anti-inflammatory;
 in bronchial asthma,
 diarrhoea, insomnia
 PU - Leaf, seed
 AP - In: Sutshekhar,
 Kanakaasava.



LN - *Datura stramonium*

SN - Datura

NN - Dhathuro

F -, Solanaceae

D - Up to 6000 feet

CC - Glabrous or farinose
annual, usually
3 feet high; stem erect;
flowers white;
seeds black

TU - Antispasmodic,
narcotic,
fruit juice used
in curing dandruff
and falling of
hair.

PU - Leaf, seed and fruit

AP - In: Sutshekhar ras, kankasava



LN - *Gloriosa superba*

SN - Laangali

NN - Kevari

F - Liliaceae

D - Up to 6000 feet

CC - Perennial,
climbing herb;
leaves alternate,
lanceolate,
tip ending
in a tendril;
flowers red

TU - Purgative, cholagogue,
anthelmintic,
insecticidal, oxytocic

PU - Rhizome

AP - In: Kaasisaadi taila,
Laangali rasaayana.



IN – Juniperus communis
 SN- Hapushaa
 NN – Dhupi
 F Cupressaceae
 D 4000-13000 feet
 CC Shrub or small tree; bark reddish brown; leaves linear, apex pointed; fruits globose, blakish
 TU - Stimulant, anti-inflammatory, analgesic, stomachic, expectorant, diuretic, emmenagogue
 PU - Fruit.



SN- Linum usitatissimum
 NN – Atasi
 F- Aalas
 D – Linaceae
 CC Cultivated in Nepal Annual herb 2-4 feet high; leaves linear or lanceolate, narrow; flowers blue in clusters
 TU - Anti-inflammatory, nerves tonic expectorant; in urinary tract infection
 PU - Flower, seed, oil
 AP - In: Atasyaadi lep



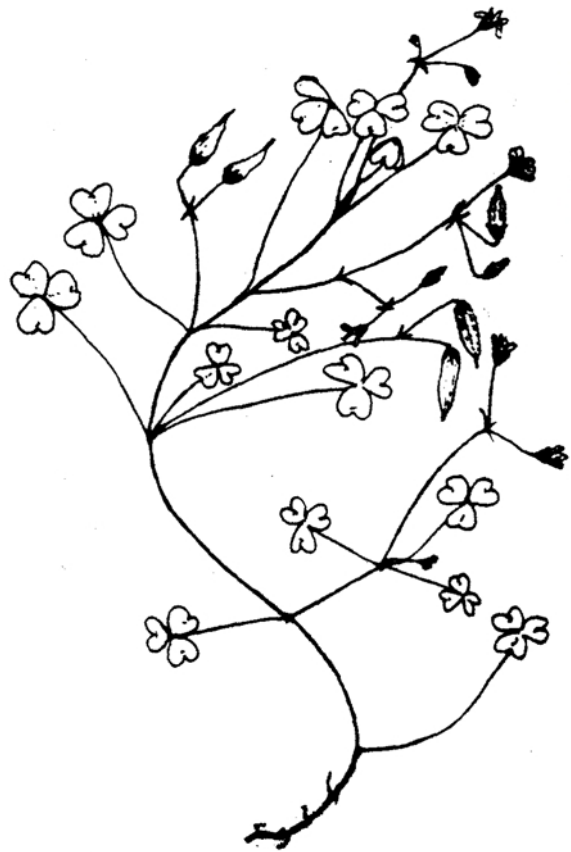
- LN - *Ocimum sanctum*
 SN - Tulasi
 NN - Tulasi patra
 F - Labiatae
 D - Cultivated in Nepal
 CC - Much branched herb;
 leaves oblong or
 elliptic-oblong;
 flowers in raceme
 TU - Expectorant,
 diaphoretic,
 stomachic,
 demulcent,
 antitubercular,
 diuretic,
 analgesic,
 antiperiodic,
 in common cold,
 influenza,
 catarrh
 PU - Whole plant,
 root, leaf,
 flower, seed
 AP - Tulasi swaras,
 Tulasi churna.



- SN - *Origanum vulgare*
 NN - Marubak
 F - Saj ivan
 D - Labiatae
 CC - 6000 to 12000 feet
 Perennial, aromatic, erect herb, 1-3 feet
 high; leaves ovate, entire; flowers small,
 whitish or purple
 TU - Analgesic, anti-inflammatory,
 deodorant, emmenagogue,
 stimulant, expectorant
 PU - Whole plant.



- LN - Oxalis corniculata
 SN - Amla patrikaa
 NN - Chari amilo
 F - Oxiladaceae
 D - Up to 7000 feet
 CC - Annual or perennial herb; leaves trifoliate; leaflets obcordate; flowers yellow
 TU - Analgesic, anti-inflammatory, stomachic, digestive, haemostatic; in remittent fever, dhatura poisoning
 PU - Whole plant
 AP - In: Chaangeri ghrita.



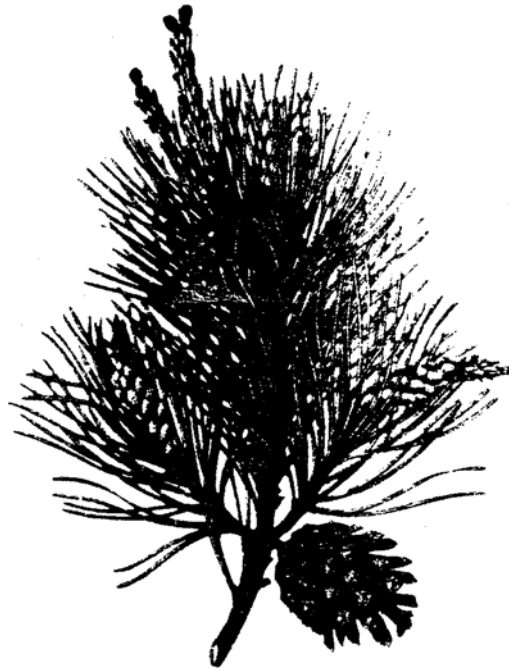
- LN - Phyllanthus emblica
 SN - Amalaki
 NN - Amala
 F - Euphorbiaceae
 D - Up to 1700 m
 CC - Deciduous tree nearly 15 m. high leaves linear, oblong, acute and apiculate at the apex, fruit globose, smooth and fleshy
 TU - Fruits diuretic, laxative, thirst, disease of heart, rich in vitamin C, stomach disorders
 PU - Fruits
 AP - Amala churna



LN Pinus roxburghii
 SN Sarala
 NN Sallaa
 F Pinaceae
 D 1000 to 7000 feet Large tree; trunk
 CC straight and tall; bark grey, scaling
 in patches; needles long, in groups
 of 3, dark or light green

TU - Nerve tonic,
 haemostatic,
 expectorant,
 diuretic

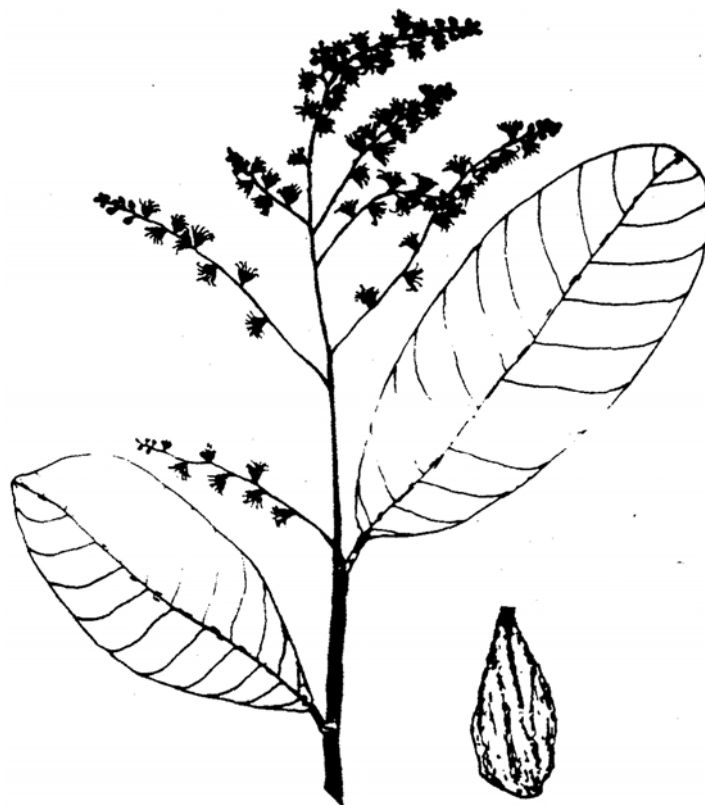
PU - Wood, resin, oil.



LN - Rhododendron arboreum
 SN - Pullaasa
 NN - Laali guraans
 F - Ericaceae
 D - 3800 to 10000 feet
 CC - Medium sized tree;
 leaves oblonglanceolate,
 entire, acute;
 flowers deep
 red to pinkish
 Z'U - Analgesic,
 cholagogue;
 in liver disease,
 jaundice
 PU - Bark



- LN- Terminalia chebula
 SN- Haritaki
 NN - Harro
 F Combretaceae
 D Up to 5000 feet
 CC Tall or medium sized tree; leaves ovate or elliptic, acute, petioled; flowers hermaphrodite, whitish-yellow; fruits obovoid or ellipsoidal, 5-ribbed
 TU - Anti-inflammatory, analgesic, stomachic, digestive, laxative, expectorant, diuretic
 PU - Fruit-pulp
 AP - In: Abhayaarista, Triphalaa churna.



- LN - Zanthoxylum armatum
 SN - Tejovati
 NN - Timur
 F - Rutaceae
 D - 4500 to 8000 feet
 CC - Thorny shrub or small tree; leaves pinnate; leaflets 2-6 pairs, ellipticlanceolate; petiole winged; flowers small, yellow; fruits ovoid, pale red
 TU - Aromatic, analgesic, stomachic, carminative, expectorent, diuretic, diaphoret antipyretic; in toothache
 PU - Bark, fruit
 AP - In: Tumbarvaadi churna
 Tejovatyaaadya ghrita



LN - *Zizyphus jujuba*

SN - Badar

NN - Bayar

F -Rhamnaceae

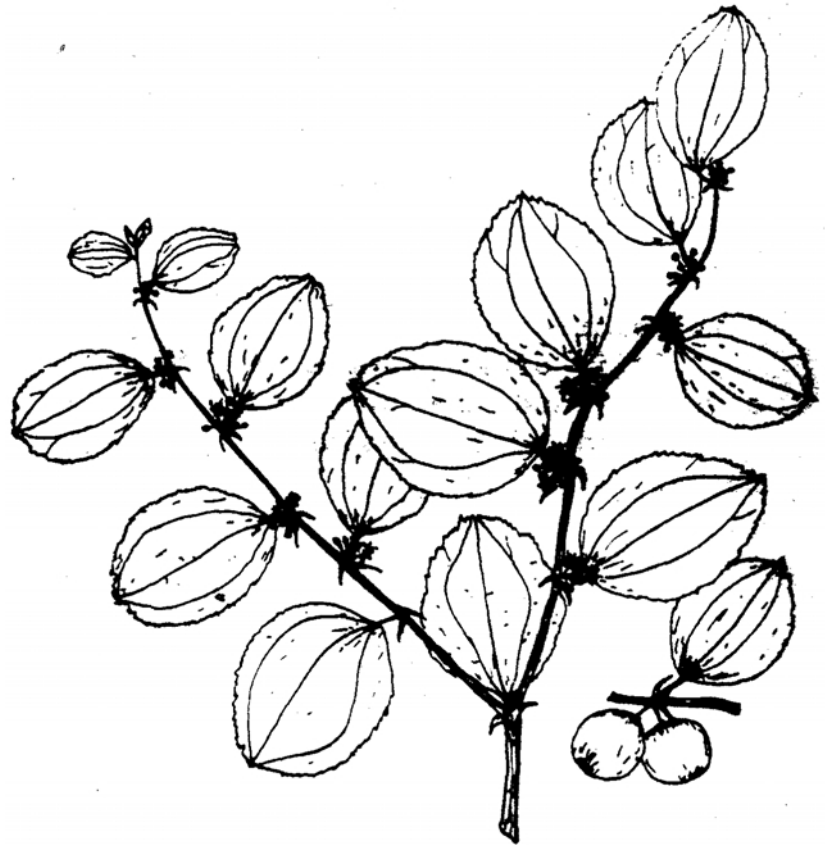
D - Up to 5000 feet

CC - Tree; much branched, thorny; leaves ovate-elliptic, sub-orbicular, lower surface whitish; flowers greenish-yellow; fruits globose or globose-oblong

TU - Pectoral, blood purifier, digestive; in diarrhoea, wound, skin, ulcer

PU - Root-bark, bark, leaf, fruit

AP - Badar churna, Badar kvaath



Detail list of medicinal herbs/plants with their uses in veterinary medicine is presented in **Annex I**. List of chemicals of plants origin and other chemicals uses in veterinary medicine is prepared in **Annex II**. List of homeopathic medicines and homeopathic treatment of domestic animals is shown in **Annex III** (Raat Van 1948 and Purscll 1911). Unani treatment of domestic animals with unani medicines is shown in **Annex IV**.

In Nepal, Royal Drugs Limited is the only recognized industry where medicinal herbs are being processed into medicines in different forms. These products are particularly meant for human medicine, and not for veterinary medicine. Although Nepalese veterinarians are prescribing some of these products for small animal diseases, which seems to be very effective and economic. Medicinal herbal plants are also grown in different His Majesty's Government Herbal Farms in Nepal (See **Annex V**).

In India there are registered and well recognised industries such as the Indian Herbs Research and Supply Co. (Regd.) and Bhartiya Bootee Bhawan (Regd.) whose products are sold and used very effectively here in Nepal. Probably these types of herbal products can be produced in Nepal by Royal Drugs Limited in the future.

7. Recommendations:

Considering the rich trove of traditional veterinary medicines indigenous to the South Asian Association for Regional Cooperation (SAARC) region as a whole and the glaring lack of adequate modern facilities, for the animal population and also majority of the peoples of the region it has been observed that there is a common felt need for pulling resources to provide animal health coverage to the maximum numbers of animals as well as numbers of small farmers. SAARC has a special obligation to develop appropriate measures to promote and develop traditional veterinary medicines in the region. It is imperative that each member state of the SAARC promote and develop the indigenous veterinary medicine that are extensively used in the region. In addition, given the necessary funds and facilities, it can be an effective answer in filling the glaring gap in animal health facilities between the urban commercial farmings and small farmers of the rural areas. Veterinary practitioners of this system use ingredients that are indigenous and can be procured in large quantities. Hence, by developing this system the nations of the region particularly Nepal would not only be preserving their/her rich veterinary traditions but, would also be saving huge amounts of the scarce foreign exchange flowing out yearly in importing modern veterinary medicines. His Majesty's Government of Nepal should provide funds and measures for the development and preservation of the traditional veterinary medical system which promises considerable benefits to the 93 percent of whole Nepal population who are farmers and keeping animals and birds for their livelihood.

- 7.1 The traditional veterinary medicines should be recognised, legalised and developed as an integral branch of whole veterinary medicine. There should be free dialogue and interaction between the modern veterinary practitioners and traditional veterinary medical workers for final integration between the two.
- 7.2 For promotion of veterinary medicines, all the veterinary stockman, veterinary supervisors, junior technical assistant (JTA) and Junior Technician (JT) of the country would be given an orientation in traditional system of veterinary medicine since most trained animal health workers are not well trained in conceptual aspects of this systems. It will be desirable to prepare a list symptomology pertaining to each disease. They should be trained in identification of simple remedies, their collection, preparation and its proper use.
- 7.3 Institute of Agriculture and Animal Science should teach at certificate and diploma level in traditional (Indigenous) Ayurvedic system of veterinary medicine at the earliest possible date.

- 7.4 Traditional veterinary workers as mentioned above who are working in the villages should also have basic knowledge of modern veterinary medicine. Short-term training programmes should be conducted at the district or zonal or regional level for them.
- 7.5 Pharmacopia of early available safe and effective remedies used in the traditional systems of veterinary medicine should be developed. A list of herbs and drugs available in the country should be prepared. The drug should be those which are commonly used and available in the rural areas for the animal disease remedies of the small farmers. Since in most of the drugs are of herbal origin, it would be necessary to identify them botanically recommend the method of collections, storage processing and manufacture on standardised quality control procedure.
- 7.6 Since animal health is one of the important elements of the rural community for the small farmers economy, the traditional system of veterinary medicine would be desirable to be included as the most commonly used traditional remedies for animal health promotion.
- 7.7 To encourage cultivation of medicinal plants according to suitability of soil, altitude, climate and rainfalls. Rear their crop in the proper, maturing season and make them available fresh or dried and preserve them from under hygienic conditions.
- 7.8 To explicate the existing forest resources for collection of drug plants through the forest contractors and collectors. Also to advise the forest department in intensive cultivation of some of the suitable and successful species of medicinal plants.
- 7.9 To encourage the public in general, farmers and gardeners, in particular and the private suppliers to grow more forest plants by supplying them seeds, seedling and cutting, etc. at proper season.
- 7.10 To encourage traditional veterinary practitioners for preparation of the drugs and ensure some incentive to them.
- 7.11 Research and development of medicinal plants for clinical evaluation and utilization in both processed as well as semi-processed forms.
- 7.12 Nepal should prepare a comprehensive plan for promotion and utilization of traditional veterinary medicine in animal health care. Collaboration and assistance may be needed from international and bilateral agencies in the following areas:-

- Training through fellowship, seminar, workshop, study groups.
- Exchange of expertise through short term consultant (STC) and other technical co-operation among developing countries (TCDC) mechanism.
- Exchange of information through documentation, journal, intercountry seminars.
- Promoting research.
- Assisting in setting up manufacturing unit assisting in production of traditional pharmaceutical preparations for use in health care.

References

- Bajracharya, M.B. (1979) Role of Nepalese Medicinal Plants in Traditional Medicine J. Nep Pharm Assoc, Vol. VII (Special issue) PP 33-36
- Bastola, G.N. (1979) Concept and present status of Traditional System of Medicine. J. Nep Pharm Assoc. Vol II (Special issue) PP 19-23
- Bhattarai, N.K. Home herbal remedies of the urban population of Kathmandu Valley, Nepal. J. Nepal Pharm. Assoc. Vol. XV, 1988, No. 1, 2: 13-27.
- Dastur, J.F. Medicinal plants of India and Pakistan. Bombay: D.B. Taraporevala Sons, 1962.
- Fluck, H. Medicinal plants and their uses. W. Foulsham and Co.Ltd. London, 1973.
- Gurung V.L. (1979) Medicinal Farms of Nepal. J. Nep Pharm Assoc. Vol VII (Special issue) PP 49-56
- Joshi, D.D. (1979) Role of indigenous drugs and veterinary Medicines. J/Nepal Pharma Association. Vol. VII (Special issue) PP57-59, Kathmandu
- Joshi, D.D. Traditional (Indigenous) systems of veterinary medicine for small farmers in Nepal, FAO Regional Office for Asia and the Pacific, Bangkok, 1984.
- Malla, S.B. Medicinal plants of Nepal. Department of Medicinal plants, Kathmandu, 1970 & 1984.
- Manual for the Health Guide: Ministry of Health and Welfare, New Delhi, India.
- Manual for Community Health Worker, (1977) Ministry of Health and Family Welfare, New Delhi, India
- Manandhar, N.P. Useful wild plants of Nepal. Nepal Research Centre Publications No. 14, 1989.
- Medicinal Plants of Nepal (1970) Department of Medicinal Plants, Ministry of Forest and Soil Conservation HMG/Nepal
- Mishra, R.P. (1979) Strategy in the process of Development of Traditional Medicines in the main stream of Primary Health Care Delivery System. J. Nep. Pharm Assoc. Vol. VII (Special issue) PP 37-39
- Murthy N.A. and Pandey D.P. (1982) Ayurvedic Cure for Common Diseases Orient Paperback Delhi, India.

- Pandey, V.N. and Pilapitiya, U. (1982) Working paper for WHO Inter-Country Workshop on Community used Traditional Medicines, WHO/SEARO.
- Pursell, J.P. (1911) Poultry Sense. A treatise on the Management and care of Chickens including the treatment of the more common diseases. Grand View, Seller Ville. P.A. London.
- Raat Van, H.W. (1948) Homeopathic Treatment of Domestic Animals. The British Homeopathic Associal, 43 Russel Equare, London. W. C.1
- Rajbhandari, T.K. Pharmacognostical evaluation of crude herbs and drugs used in Ayurvedic Medicine. National Conference on Science and Technology. RONAST 1988: 450-455.
- Sharma A.K. (1979) Quality Control Standardilization of Traditional Medicine. J. Nep Pharm Assoc. Vol. VII (Special issue) PP 87-93
- Sheak, A. and Thapa B.B. (1979) The concept and present international status of Medicinal Plants. J. Nep Pharm Assoc. Vol. VII (Special issue) PP 96-105
- Shrestha A. B. (1979) Traditional Medicines Notes on Action Programmes with reference to Ayurvedic Medicine. J. Nep Pharm Assoc. Vol. VII (Special issue) PP. 107-112
- Shrestha T.B. (1979) Traditional Medicine and Native Plants of Nepal. J. Nep. Pharm Assoc. Vol. vii (Special issue) PP 4548
- Shrestha, A.B. Essential Drugs and Pharmaceutical Development in Nepal: Notes on Oppurtunities. J. Nepal Pharm. Assoc. Vol. XVI, No. 1, 2, 1989: 33-46.
- Singha L.M. (1979) Ayurveda in Longterm Health Planning. J. Nep Pharm. Assoc. Vol. VII (Special issue) PP 41-44
- Tiwari, N.N. and Joshi M.P. Medicinal plants of Nepal: I, II and III, JNMA, 1990; 28: 181-190, 226-279.

Annexes

Medicinal Plants Used in Veterinary Medicines

Annex 1

Local Name of Medicinal Plants	English Name of Plants	Botanical Name of Plants	Medicinal Uses
Ajawan, Jwanu	Ajawan	Trachysperimum ammi (Leinn) Spraque	Fruits: Antispasmodic, stomach Ache. Carminative, Stimulant tonic, used in diarrhoea, dyspepsia, colic, flatulence and indigestiom. Root: diuretic and carminative
Ander; Andela Arenda	Castor seeds	Ricinus Comm-nis Linn	Seed: Purgative, Coun terirritant in scorpi onsting and also used for fish poisoning
Atis	Atis Root	Aconitum Hetero-phyllum wall	Root: Antiperiodic, aphrodisiac astringint tonic,in diarrhoea dyspepsia and cough
Aduewa, Sootha	Ginger	Zinger offici-nalis Root:	Rhizome: used as a st mulatant, carminative and flavouring agent given in dyspepsia & flatulent colic, pres cribed as an adjunc to to many tonic & stimu lating remedies.
Anantamu	Indian Sars-Hemidesmus Aparrilla	indicus R.Br.	Root: used as substit ute 'for sarasaparrila demulcent, alternative diaphoretic, tonic, irk loss of appetite, dis inclina of food.Fever, in skin diseases as blood purifier,syphylis rehhumatish & in scor pion and snake bite.

Anar	Pomegranate	Punica Granatum linn	Root-Bark: and Stem- Bark: astringent, ant- helmenthic,specific in tapeworm. Rind of Fruits: combi ned with aromatic like clowes, etc. used in diarrhoea and dysentry Seed: Stomach ache, Pulp:Cardiac & stomach ache Fresh juice: cooling & refrigerent. Bark: used as a vermi fuge and in the treat ment of diarrhoea and dysentry.
Aparijita	Butterfly pea	Clitoria Termatea linn	Seed: Purgatives and aperient Root:Bitter chathartic purgatives & diuretic. Plant stem: to be use in snake bite
Aphime	Opium poppy	Papaver Somniferum	Opium: The inspissated milky juice from imma ture capsules in narcotic and hypnotic drug.
Amaljhar		Cassia mimossides Linn	Root: given in spasma of stomach
Alainchi	Greater Cardoman	Ammonium Subulatum Rexb	Seeds: Stomach-ache, useful in neuralgia, used in gonorrhea as aphrodisiac, antodote to scorpion bite and snake bite. Oil from seeds: aroma tic, stimulant, stoma ch ache and applied to alloy inflamation.
Asuro Kalo Kashak		Adhatoda Vasica Nees	Leaves & root: used in cough,chronic'bronchi tis, asthma & pthisis. Leaves: used in rheum atism & insecticidel. Flower, Leaves &roots: antispasmodic. Plant:used as exacto rant in large doses it is irritant and causes

			administered as juice, liquid extract, syrup or tincture.
Aswagandha	Winter cherry	Withania Somqhifera	Root: Considered alternative aphordisiac, tonic, deobstrient diuretic, narcotic, abortifacant, rheumatism, consumption, debility. Leaves: bitter, infusion given fever, Bruised leaves & ground root: locally applied to painful swelling, carbuncles & ulcer, Fruit: diuretic & used for coagulating milk.
Alees	Linum usit atississium Linn	Linum Usit- atississium Linn	Dried ripe seeds: used as demulscent & in form of populatic useful for the gout & rheumatism swelling, used internally for gonorrhea and irritation of the geneto-urinary system. Bark and leaves flowers: used in gonorrhea. Flowers: nervine and cardiac tonic. Oil mixed with lime water: applied in burn.
Aank	Giant milk	Calotropis gigantea (linn) R.Br. ex Ait	Root bark: used in dysentery, substitute for inpecacauanhea dia-phoeratic, expectorent & ematic. Tincture of leaves used in intermittent fevers, Latex: irritant, used as purgative in combination with euphorbia neurifolia. Powdered flowers: used in cold cough, asthma and indigestion Plants: Used in syphilis, dysentery vomitting viscera and intestinal worms.
Angeri		Lyonia ovalifolia (wall) drude	Infusion applied in cutaneous Young leaves & buds: poisonous to goat, used to kill insect.
Amp	Mango	Mangifera indica Linn	Leaves: used in scorpions' ting Ripe fruit: Laxative, diuretic astringent, useful in haemor-, rhage from uterus, lung, and intestine,
			Unripe fruit: useful for ophthalmia and eruption. Rind fruit: astringent,

			stimulant and tonic in debility of stomach. Seed: used in asthma.. Bark: astringent, used in Uterine heamorrhage & diarrhea and other discharges.
Isabgool	Ishafghula	Planta go Major linn	Seeds: Tonic, stimulant and useful seeds remedy for dysentery. Leaves and roots: astringent, Use in fever and leaves applied to bruises.
Immali	Pamarinols	Pammarind-atus Indica carminatives, laxative,useful Linn	Fruit: refrigerent,digestion in diseases caused by deranged bile.
Unue or Neuro	Male Ferm	Dryopteris Filix mas(L) Schott	Rhizome: Possess anthelmentic
Ukhu,Saccar sahacha	Sahachar Sugar-cane	Sacchrum Officinarum linn	Stem: Sweet,laxative,diuretic cooling and aphrodisiac Root: demulcent,cooling
Uneu or Neuro	Fern	Actinopteris dichotoma Kuhn	used as an helmenthic.
		Adiantum capillusveneris linn	Used as febrifuge, for the treatment of bronchial and throat pain and also used as an expectorant.
		Adianthum caudatum linn	Used for cough and fever and also used for skin diseases
		Adiatum pedantum linn	Used as demulcent,expectorant and tonic.
		Adintum philippense linn	Used for the cure of glandular swelling accompanied by fever dysentry, ulcers, erysipilas strangury.

<p>Adiantum vernystum D.Don</p>	<p>Used for wounds, diseases of chest, used in the treatment of fever billiousness, inflammation , ophthalmia hydrophobia, tumours, cold and headache and hair fall. It is also used to cure Tubercular glinds and to Quench pain of scorpion stinging. Used in antihelmentic</p>
<p>Blechnum orientalis linn.</p>	
<p>Botrychium Languginapum wall ex hook et crew</p>	<p>Used for the treatment of cut and bruises</p>
<p>Botrychium lunaria L.(S.W.)</p>	<p>Used as vulnerary and in dysentery.</p>
<p>Cheilanthus Tenifolia (Burm) WS</p>	<p>Used as a general tonic.</p>
<p>Cyrotonium caryotideum presl</p>	<p>Used as an antihelmenthic mainly for the expulsion of the Tapeworm.</p>
<p>Dicranopteris linnearis (Burm) underwood</p>	<p>used as an antihelmenthic and for the treatment of asthma.</p>
<p>Drynaria iuercifolia (L) J.SM</p>	<p>Used as tonic, astringent and also for the treatment of typhoid pthisis,hectoc fever, dyspepsia and cough. used as a cooling medicine & for gonorrhoea.</p>
<p>Equistum debile Resb ex vaucher</p>	
<p>Helminthos tachys Zeylarica(L) Hook</p>	<p>Used as a asperient intoxicant anodyne and also used in sciatica.</p>

	Hypolepis Hunctata (thumb)Mett	Used as a poultice in bills.
Male Fern	Lycopodium Cernum linn	Used in the cough and skin eruption.
- -	Lycopodium clavatum	Used in a gastric sedative in indigenous,cystitis, rheumatism dyspepsia, syphillis muscular craps & eye trouble.
- -	Lygodium flexuosum L. SW	Used externally for the treatment of rheumatism, eczema ulcers,wounds,sprains,scabies ect.
	Lygodium Japonicum (Thumb)SW	Used as an anthelmentic
- -	Oleandera neriiformiscar	used as emmenagogue
	Oleandera wallichi (Hook)presl	In Homeopathic system of treatment used as a rejuvenator in the above system.
- -	Onychium Silicrelosum (Desv)C.chr.	Used in dysentery
	Ophioglossum vulgatum	Used for the treatment of wounds in cases of vomitting or bleeding by the nose and mouth also used as cholangogue.
	Osmunda claytoniama	Used as an adulterant and antihelminthic.
- -	Polypodium vulgare L.	Used as an voluntary,remedies for wounds, a lition for boils and as purgatives.
- -	Pteridium Aquilinum (L) Kuhn	Used as astringent & for the treatment of chronic disorder obstruction of viscera and spleen.
	Sphenomeris chinensis(L) Maxom	Used for the treatment of chronic enteritis.
	Tectoria poliomorphi-	Used as an anthelminthic.

pha(wall) copul

Ainselu	Golden evergreen Raspberry	Rubus ellipticus SM	Plant: Astringent and tonic.
Okhar	Walnut	Juglans regia linn	Bark: antihelmenthic and det ergent. Leaves: astringent, tonic, in decoction-considered to be specific in trumeous roses and anthelmenthic. Fruits: alternative in rheumatism.
Kachur Sathi Zeolary		Curcuma Zedoaria Rose	Rhisome:Stomach ache, colling diuretic, stimulant, carminative applied to bruises and pains, decoration along with pepper, <i>cinamonn and honey</i> beneficial to collapse.
Kantakari	Indian salamin	Solanum Xanthocarpim achrad and wendt	Root: Expectorant, used in cough asthma, catarrhl fever and pain in chest, beaten up and mixed with urine given to check vomitting diuretic and febrifuge. Juice of berries: useful in sore throat stem, flower and fruit:bitter carminative, prescribed in burning of feet in cases attended with a vesicular and watery euption. Plant: used in diuretic dropsy, in decoction-used in gonorrhea. Leaves: Applied locally to relieve pain, their juice given with black pepper in rhematism. Buds and flower: with a salt solution good for watery eyes.
Kopas Mahabala	Cotton	Grossypium arboreum linn	Root: Used in fever Seed: In gonorrhea, cystitis, catarrh and consupcion.
Kapoor	Camphor	Cinnamomum	Plant: anodyne, antispa

smodic, capur , Kamal	East Indian	camphora nees and eburu Nelbium nucifera graertuien	diaphoretic, antihelmenthic stimulant and used in insect icide preparation. Flower: cooling, astringent, used in diarrhea, in cholera, in fever and in disease of the liver and recommended as a cardiac tonic. Seeds: used to check vomitting and refrigerant, a cooling medicine for skin diseases considered as antidote to poison.
Karu,Naru, Naroo	Horse chest nut	Aesculus undicus	Fruit: Given to horse colic. Fruit: Oil from seed use as externally for rheumatism.
Karela, Karelo	Bitter cucumber	Charantia Linn Momordica	Juice of leaves: emetic pur gative given in bilious affe ction; rubbed burning sides of the feet. Fruits and leaves: antihelmi nthic,useful in piles, leprosy jaundice andalso used as vermifuge. Root: Astringent and useful in haemorrhoides. Fruits: Stomach ache, Juice of fruit: in snake bite
Kala nasika Kagachu Karu		Leea Aeguate Gyentiana Kurro Royle	Tubers and stems: astringent and mucilaginous. Use for urinary affection Root: Tonic stomach-ache, febregug use as masala of a fattening hor.
Kalo Haledo Haledo	Black Termeric	Curcuma Longa Linn	Rhisome: aromatic, stimulant, tonic carminative, blood pur- ifier antiperiodic. Alternative: externally applied to sprains and wounds Decoction of Rhizome: in pavulent conguctivitis, Fresh Juice: antihelmenthic, and used as anti-sporaditic for many skin affection.

Kuchila	Nux vomica	Strychnos Nux vomica linn	Leaves: applied as poultice slough wounds and ulcers. Seeds: with aromatics given in poisonous. Wood: used for dysentery and stomach disease
Kutki	Gentian	Picrorhiza Kurroa Royale ex Benth	Root: bitter, cathartic used in fever, dyspepsia, and in purgative preparations in scorpion sting.
Kurkure ghangs Ankhali ghangs Kairo jhar Jyapu jhain		Equisetum debile Roxb, Gnaphalium luteoalbum linn	Plants: Cooling medicines, given in gonorrhea. Leaves: astringent and vulne rary
Khanayo		Focus cunia Buch Ham ex Roxb	Fruit: given in aphthous comp laints, Juice of roots: given in bla dder complaints
Khayer	Crutch tree	Acacia Catechu willed	Bark: astringent Plant: cooling and digestion useful to soothe throat, mouth and gums pain, in cough and diarrhea and as a cooling application to ulcers, boils and eruption of the skin.
Khas Khas kas	Khus Khus	Vetiveria Zizanioides linn(Naph)	Root: used in infusion, consi dered refrigerant, febrile fuge, diaphoretic, stimulant stomachic and emmenagogue pulverized and paste in water used as a cooling external.
Gane		Houttuynia cardate thumb	Rhizome: Used in medicinal preparation prescribed for certain disease of cattle. Plant: Considered cooling resolvent indigestion and emmenagogue. Leaves: used in dysentery, gonorrhea eye troubles, skin disease and haemorrhoids. Roots: Extract is reported to posses diuretic action.
Ganmane ghans		Agaratum conyzoides linn	Juice of root: antihelminthic leaves-styptic, applied to cut and sores.
Galen		Leea robusta	Roots: used in dysentery and

Ghatte ghans	Roxb	given to cattle in diarrhea
	Viola serpens wall	Plants: antipyretic, diaphoretic, febrifuge. Flowers: emollient, demulcent. used in biliousness and lung troubles, Roots : Emetic

Ghiu Kumari	Indian Aloes	Aloe barbadensis Mill	Purgatives, in colon constipation and contraindicated in haemorrhoid menstruation and pregnancy.
Chamsur	Garden cross	Lepidium Sativum linn	Plant: Administered in cases of asthma, cough, with expectoration and bleeding piles Root: used in secondary syphilis and tenemus. Seeds: gatactagogue and administered after being boiled with milk to cause abortion applied to pains or hurts as a poultice and used as aperient. Leaves: stimulant, diuretic useful in scorbutic disease.
Chameli phool	Tree Jasmine	Jasmineum arborescens Roxb.	Leaves: slightly bitter, astringent tonic and stomachic, Juice of leaves: used with pepper garlic and other stimulants as an emetic, in obstruction of the bronchial tube by viscid phlegm.
Champ		Michelia champaca linn	Bark: Febrifuge, stimulant expectorant, astringent. Dried root and root bark: purgative, in the form of infusion on useful emmenagogue, mixed with useful application to abscesses. Flowers and Fruits considered, stimulant, antispasmodic, tonic, stomachic, carminative, bitter and cooling, used as diuretic in renal diseases and in gonorrhoea, mixed with sesum oil forms an external application in vesigo. oil form flowers: useful application in cephalgia ophthalmia and gout, Juice leaves: given with honey in colic. Seeds and fruits: used for holding cracks in feet.
Chichido	Serpent or snake gourd	Trichosan thus,anguina linn	Seeds: cooling Fruit: considered purgative antihelminthic and emetic.

Chiraita	Chiretta	Swertia Chirata Hamilt	Plant: bitter, tonic, stomachic febrifuge, laxative, antihelm enthic, antidiarrhorotic, dyspepsia and tonic to gouty person.
Chilaune		Sohima wallichii chis	Bark: irritatives, skin, antihelminthic and rubefacient. Young plant: leaves and root stock used against fever, antipyretic. Fat: used in ointment in rheumatism for chapped hands, etc in water.
Chiuri		Madhuca byracea (rx) Macbride	
Chutro	Berberry	Berberis aristata DC.	Root, Bark & Wood: alternative, deobstruent, used in skin di seases menorrhagia, diarrhea, jaundice, affection of eye. Decoction of root bark: in malarial fever. Plant: bitter, tonic, Alterative astringent, stomachic-, diaphoretic and as curative of piles.
Chhin, Chinne Bikh		Crotalaria sericea Retz	Plant: used in scabies and impetigo poisonous to livestock.
Jattamansi	Spike nard	Nardostachys jatamansi DC.	Root: aromatic bitter tonic, stimulant antiseptic, employ ed for treatment of epileptic, hysteria, and convulsions affection, used in palpitation of heart, substitute for valerian, useful in intestinal colic, antispasmodic, diuretic, emmenagogue carminative, stomachic, and laxative in hysteria and cholera.
Jeera	Cummin	Cumminum cyminum linn	Fruit: Stomachic, stimulant, carminative, astringent, useful in dyspepsia, an diarrhea, used and spices and in veterinary medicine. Seeds: in snakebite.

Tatelo	Indian Trumpet flower	Oroxylum indicum vent	Red bark: astringent, tonic, useful in diarrhea, and syst entry. Bark powder: along with besar (curcuma longa) useful for curing sorebacks of horses, in powder-in infusion, diaphoretic, useful in acute rheumatism, bitter. Tender fruit: carminative and stomachic. Seeds: purgative, Stem scorpion sting.
Thotme, potuswa Tickanbri Digitalis	Fox-gloves	Polygonum molle D. Don Digitatis purpura linn	Plant: astringent Leaves: used for the certain condition of the heart mainly as a cardis stimulant and tonic.
Telepati	Mug-wort	Artemisia vulgaris linn	Herb: emmenagogue, antihelmintic antospasmodic & stomachic Infusion of leaves & flower tops administered in nervous and spasmodic affections in asthma & diseases of brain.
Tejpatt	Cinamonum leave	Cinnamomum Nees tamala & emberm	Bark and plant: aromatic astringent stimulant, carminative, useful for checking nausea and vomiting.
Tori Sarsoo	Mustard seeds	Brassica campestris linn	Tuberous roots and seeds: considered antiscorbutic.
Dalchini khukki Taj	Cinnamome	Cinnamomum zeylanicum Blume	Bark: aromatic and in gonorrhoea, Leaves: stimulant, carminative, used in rheumatism colic, diarrhea and in scorpion sting.
Dhaniya	Coriander	Coriandrum sativum linn	Fruits: aromatic stimulant, carminative, diuretic, tonic, stomachic. antibilious, refrigerant and aphrodisiac.
Natkanta		Paramignya Monophylla weight	Root: alternative, diuretic, given to the cattle in haematuria.
Nagbeli	Lycopodium	Lucopodium	Herb: diuretic antispasmodic

		clavatum linn	in herb of a decoction used in rheumatism and diseases of lungs and kidneys.
palas, Hasta Bastard Karni, Palas	Teak	Butia Monosperma (linn)Kuntze	Seeds:antihelminthic, substi- tute for santonine rebeفاع en, treatment of roundworm. Gums: astringent in diarrhea and dysentery. Leaves: astringent, diuretic depruratives and aphmodiac. Bark and Seeds:in snake-bite. Fruit: Bitter Leaves:are applied to headache An infusion of the leaves used for asthma and high fever. Roots:antidote to snake-bite.
Pipal Pati		Pericamply- lus glancus (linn) merril	
Pudina	Pepermint (Mint Plant)	Mentha arvensis linn	Dried plant: astringent, carminative stomachic,refrigerant, stimulant, emmenagogue & diuretic. Oil: rich in carvone.
Panch aumle	Orchid	Orchis lotifolia linn var incarnate	Tubers: Tonic
Pyauli		Reinwardtia indica Dum	Plant: used as a medicine for fonder in cattle.
Badchar		Artocarpus lakoocha	Seeds: Purgative, bark in powder from applied to sores to draw out purulent matter, in infusion applied to small pimples and cracked skin.
Babul	Gum Arabic Tree	Acccia arabuica willd	Bark: astringent & demulcent. Bark leaves, pod & gum: tonic used in diarrhea, dysentery, gonorrhoea, diabetis, millitus and sore throat. Imported in Nepal.

Bar	Banyan tree	Ficus bengalensis linn	Milky juice: applied externally for pains, in rheumatism the lumbago. Infusion of bark tonic astringent used in diarrhea, dysentery and diabetis. Seeds: cooling and tonic leaves- applied as poultice to abscesses.
Barro	Bantard myrobolum	Terminalia belerica Roxb	Fruit: bitter astringent, tonic laxative antipyretic used in piles dropsy, diarrhea, leprosy, biliousness dyspepsia and head ache. When half ripe purgative and when full ripe astringent ke nal narcotic.
Bahani Lahara sunamaria		Marsdenia tenacissima wight and arm	Root: is used as remedy for colic.
Bagh mukhe ghans		Lindenbergia indica(linn) O kuntze	Juice: given in chronic bronchitis and mixed with that of coriander applied to skin eruptions.
Barhamaso	Sweet-Sweet Nerium scented	indicum Mill	Plant: poisonous Root: powerful resolvent and attenuateant, used externally beaten into a past with water applied to chancres and ulcers on the penis. Decoction of leaves: used to reduce swellings.Oil: prepared from root bark use in skin diseases of a scaly nature and leprosy.
Bimiro	Citron	Citrus medica linn	Root: antihelminthic, in constipation useful in vomitting and uninary calculaii flowers and buds: stimulant and astringent. Ripe fruit: stimulate tonic. Juice:refregerent&astringent.
Boksi	Ghans	Mimora rubicaulis linn	Leaves: inform of infusion of prescribed in piles bruised; and applied to burns.

Belidona	Belladonna	Atropa Belladonna Linn	Root and leaves: narcotic: sedative diuretic, mydriatic and used as anodyne Berries poisonous.
Bhang Ganga	True Hemp	Canabis Sativa Linn	Plant: used as tonic, intoxicant, stomachic, antispasmodic, analgesic narcotic, sedative and anodyne; used in medicine to relieve pain to encourage sleep and to soothe restlessness.
Bhimsenpati		Buddeia asiatica Lour	Plant: used for skin complaints and as an abortifacient.
Bhiringi Jhar		Alternanthera sessilis (Linn) D.C.	Plant: Galactagogue, cholagogue, fibrifuge stem and leaves used in snake-bite.
Bhringraj		Sclipta Prostrata Rorb	Plant: tonic and deobstruent in hepatic & spleen enlargements and emetic. Plant juice in combination with aromatic administration for catarrh and jaundice. Leaves: in scorpion sting. Leaf Juice along with honey used as remedy for catarrh in infant. Roots: emetic purgative, applied externally as antiseptic to ulcers and wounds in cattle.
Bhendi Phool		Crotalaria albida Heyneex Roth	Root: Purgatives.
Bhende Kuro	Barleria	Bareleria Cristata Linn	Roots and Leaves: used for reducing swelling Infusion: given in cough Plant: in snake bite.
Vyakur		Dioscorea Deltoidea Wass	Tubers: used to kill lice and fish poison.
Madhesi sounp	Foeniculum	Foeniculum vulgare Mill	Seed: seed stimulant aromatic, stomachic, carminative, and emmenagogue. Leaves: diuretic Root: purgative oil from seed: vermicide.
Methi	Fenugreen	Trigonella	Seeds: carminative, tonic,

		Foeniculum linn	aphrodiac Leaves: used both internally and externally for their cooling.
Yersa Gamba	Corydalis	Cordyceps sinensis (Berk) Sacc	Plant: Tonic in thakarees, the plant as a whole is taken or ally in combination with orchis incarnata honey and cow's milk tonic to yaks and sheep.
Rati gedi	Grab's eye or vine line lidurice	Arbus Precatorius linn	Seeds: Purgative, emetic, aphrodiac used in nervous disorder & cattle poisoning. Leaves, roots and seeds: used in eye diseases and skin diseases.
Raj-briksha Amaltash	Cassia pods	Cassia fistula linn	Root bark, seeds and leaves: laxative, Fruit: cathartic, applied in rheumatism and snake bite. Seed: emetic Root: astringent, tonic, febrifuge and purgative.
Rato Charpate		Anisomeles indica O kuntze	Plant: Carminative astringent, tonic oil from plant: in uterine affections.
Rato danthe ghans		Desmodium tilifolium (D. Don) will ex. cy. Don, chenopodium ambrosioides linn	Root: carminative, tonic, diuretic used in bilious complaints. Plants: anthelmintic
Rato Bhakhre ghans		Desmodium tiliafolium (D. Don) will ex. cy. Don,	Root: carminative, tonic, diuretic used in bilious complaints.
Rato latte		Chenopodium ambrosioides linn	Plant: anthelmintic.
Ramphal		Dillenia indica linn	Fruit: Possess tonic, laxative properties & is used for abdominal pains. Bark leaves: are used for astringent.
Rittha	Soap-nut	Sapindus mukarossi cyaerth	Fruit: expectorant used in salivation chlorosis and epilepsy used as a fish

poison.

Rohini sindhure	Kamala	Mallotus phillippinensis Muell Adg	Cylands & hairs: of the fruit bitter anthelmintic, cathar- tic, and styptic. Plant: purgative, anthelmintic against tapeworm, parasitic affection of skin, scabies and ringworms.
Lazzabati	Sensitive,. Mimosa plant	pudiala linn	Decoction of root: used in gravellish complaints. Leaves and roots used in piles and fistula. Leaves rubbed into a paste applied to hydrocele. Leaf & stem in scorpion bite.
Ban lunde		Amaranthus spinosus linn	Root: in menorrhagia, gonorr hea eczema colic, lactagogue.
Birbanka		Arisaema tortus csum (wall) Schoott	Plants: is used in snake-bite. Seed: given with salt for colic in sheep. Root: used to kill worms which infect cattle.
Bethe		Chonopodium album linn	Plant laxative and anthelmin thic.
Sariba		Inchnocarpus frutescens R.Br.	Roots: alternative tonic and substitute for sarsaparilla, demulcent diaphoretic, diu retic, tonic, loss of appetite, disinclination for food fever, skin diseases, as blood purifier, in leucorrhoea, syphilis, rheumatism and in scorpion sting and snake-bite.
Shobbanjan	Horse-radish tree	Moringa defera linn	Root: used in as stimulant in paralytic affection and inte mittant fever epilepsy, rubefacient, in palsy and chronic rheumatism, carminative, stomachic, abortifacient, as cardiac and circulatory tonic, fainting, giddiness, nervous debility, hysteria and flatulence. Root bark: used as fomentation to relieve spasm. Bark: abortifacient Fruits: used in disease of Liver and spleen articular pain, tetanus, and paralysis.

			Flower: stimulant & aphrodisiac. Oil from seeds: used in rheumatism. Gum: used for dental caries Seeds: used in venereal affection.
Satavari	Asparagus	Asparagus racemosus willd	Root: refrigerant, demulcent, diuretic aphrodisiac, antispasmodic, alternative antidiarrhea, antidysentery, galactagogue and as demulcent in veterinary medicine. Plant: in diarrhea, rheumatism diabetic & brain complaints.
Satisal	Rose wood	Dalbergia latifolia hic, used Roxb.	Plant: Bitter, tonic, stomach indigestion, diarrhea, leprosy and worm.
Sanonumdhiki		Breynia patens Benth	Plant: is astringent to the bowel, inflammation, diseases of blood juice of stem is used in conjunctivitis.
Satuwa		Paspalum polyphyllum Smith	Rhizome: possesses antihelminthic properties.
Sanopipala	Pepper	Piper longum L.	Plant: energetic stimulant, diaphoretic and carminative.
Simkane ghans		Floscopa scandens	Juice of stem: Put in eye sore
		Lour	
Sim ghans		Utricularia bifida Linn	Plant: used in urinary diseases.
Simali		Vitex negundo Linn	Leaves: aromatic, tonic, vermifuge and catarrhal, discutient, useful in dispersing swelling of joints from acute rheumatism and of the test from suppressed gonorrhoea. Root: expectorant, febrifuge tonic decoction of leaves with long pepper given in catarrhal fever with heaviness of head. Juice of leaves: used for removing foetid discharges and worm from ulcers, and oil preparation with it applied to sores and scrofulous sores.

Sil Timmur		Zanthoxyllum oxyphyllum Eorgew .	Fruit: bitter, appetizer, anthelmintic, pain tumours. Seed and bark: as an aromatic tonic, in fever and dyspepsia and cholera. Flower: in snake-bite.
Sisnu'	Nettle	Urtica dioica linn	Juice of plant: used as an external irritation. Root: diuretic Decoction of plant: diuretic, astringent emmemgogue, anthelmintic used in nephritis, haematuria, menorrhagia, consumption and jaundice.
Simal	Silk cotton Tree	Salmalia malabarica schott & Endl.	Root: stimulant, tonic, forms the chief ingredient in the musla-semul a medicine, which is aphrodisiac given in impotence. Root and bark: emetic Gum: aphrodisiac, demulcent, haemostatic, astringent, tonic, alternative used in diarrhea dysentery and menorrhagia. Flowers and fruit: used in snake-bite.
Sukumel, Ela	Cardamin Fruits	Elattaria cardamonium	Seed: aromatic, stimulant, stomachic, carminative and diuretic. Imported in Nepal.
Supari	Areca Nuts	Areca catechu linn	Nut: aphrodisiac, useful in urinary disorder, astringent anthelmintic, nervine tonic, emmenagogue for tapeworm and in snake-bite.
Surti	Tobaco	Nicotiana tabacum linn	Leaves: sedative, narcotic, emetic, antispasmodic, used in rheumatic swelling, skin diseases, for scorpion sting and as fish poison.
Seto dube- muriyn duboo	Bermuda grass	Cynodon dactylon (linn) perp. lis.	Decoction of root: diuretic in dropsy in secondary syphi- Infusion of root: for stopping bleeding from piles. Crushed root mixed with curds used in chronic gleet. Juice of plant: astringent used as application for fresh

			cuts and wound, diuretic, used in dropsy and anasarca, in hysterical epilepsy, insanity, astringent in chronic diarrhea, and dysentery useful in catarrhal of ophthalmia.
Shrikhand	Yellow sandal wood	Santalum album Linn	Wood ground up with water into paste applied to the temple in headache, fevers and local inflammation and to skin diseases. Heat and fruititis, diaphoretic. Imported in Nepal.
			Plant: given in fever attended with aching limbs. Locally used for fracture, often powdered and mixed with hen egg and honey & taken internally.
Hadachur	Mistletoe	Viscum articulatum Burum	
Hattipaila		Eulophia Campestris wall	Rhizomes: as tonic and aphrodisiac stomatitis, purulent cough and heart troubles.
Hathi Kane		Kalanche spathulata (Poir) DC.	Plant: poisonous to goat. Leaves: used in cholera and burnt and applied to wounds.
Kubhindo		Binnincasa hispida	Fruit: used for abortifacient, oxytocic actively, including labour pain & in controlling post partum haemorrhage.

**Chemicals of Plant origin Used
in Veterinary Medicine**

Annex II

List of Chemicals

Acacia	Ergotamine and salts
Aloine	Erogotixine and salts
Antimonium	Ethylmorphine
Apomorphine	Ferrous sulphate
Aesenicum	Hyoacine and salts
Amonium Carbo	Lanatoside C
Ascorbic Acid	Morphine and sales
Atrophine Sulphate	Menthal
Benzoic Acid	Nicotinic acid
Bismuth carb	Nescapine
Bismuth Sulphate Not.	Mercury bichloride
Caffiene Salts	Methyl salicylate
Calci carb	Papaverine and salts
Calcium phosphate	Phosphorus
Cincole (Euacalyptol)	Physostigmine salts
Citric Acid	Picrotoxine salts
Cocaine and salts	Pilocarpine and salts
Codeine and salts	Quafaine
Colchine and salts	Quinine and salts
Calephony	Quinidine and salts
Diamerphine and salts	Santonine and salts
Digoxine	Reserpine
Digitoxine	Starch
Deslanatoside C.	Silica
Emetine and salts	Strychinine and salts
Ephedrine and salts	Strophanthus G.
Ergometrine and salts	Sulpher
Calomel Sub-Hydrag perchlor	Tannic acid
Tartatic acid	Theophyline
Terpeneol	Vinblastin
Terbinth	Vincristin
Thymol	Equinol

English Name	SYN/Common Name	Botanical Name	Commonuses of the Homeopathic Medicine
Abies Nigra	Black or double spruce	Pinus nigra	In dyspeptic trouble, constipation pain in the external meatuses.
Acalypha indica	Indian nettle	A. spicata, A. ciliata	Alimentary canal, respiratory.
Achyranthus aspera	Amarantocia	Lalchira southern wood	Muscular rheumatism
Abrotanum	-	Southern wood	Marrusmus, matastatis, lineteric diarrhea, Tubercular peritonitis.
Acidum asciticum	Glacial acetic acid	Acidumc acetum	For wasting & dibility
Acedum Benzoic	Florus benzoic	Flower of Benzoic	Gouty diathesis, rheumatism, gout. Asthmatic condition.
Acedum borio	Boric acid		Putrefaction, used in soothing the ulcer and wounds. Disinfectants.
Acidum carbolic	Phenol	-	Internally: used for scarlet fever, and arthritis, External: application for dysinfection and antiseptic.
Aconite Nap	Aconite anges	Wolf bane	Acute condition of fever, cough, crou and influenza first stage. Acute condition of pain in abdomen.
Aesculus hip	Horse chest nut	Horse chest nut	Used for venous stasis confection in general, varicose vein, haemorrhoids & piles.

Aethusa cyna	Dog's parsley	Garden hemloc	use for brain &nervous system and G.I.distu rbances, vomitting, diarrhea and cholera.
Agaricus muscaris	Bug or fly agaric	Fungus	intoxicant of brain, chorea, frost bite, cold and coryza.
Allum cepa	Cepa	Onion	Coryza, damp cold, acid nasal discharge.
Allum sati vum	Allum sativa	Garlic	Colitis, voracious ea ter of meat,dyspepsia, erructation.
Aloes socoritana	Hepatic aloes	Spicata aloes	Diarrhea, colitis, po rtal conjestion,grumb ling of stomach, dysentry.
Alostonia	Echites scholaraus	Dita bark	Malerial fever,Fever with diarrhea.
Antimonium tart	Tartarius emetious	-	Used for Ac. bronchit is,pneomonis, whooping cough, chronic asthma.
Anacardium on	Marking nut	Anacardium latifolium	Oedematous, dropsy, cholera, Trembli neu rosis.
Agregentum nitricum	Nitrate of silver	-	Conjuntivitis, eye tr ouble neurosis, tremb ling.
Apis Mellifica	Honey bee	Apide	Oedematous, bropsy, chorea, Trembling neurosis.
Arnica montane	Mountain tobaco	Cathe alpine	Pain in joints,Traumatic condition apoplexy. it is used for external injuries and expernal applications.
Arsenicum album	White arsenic		Gastro-entritis, diarrhea, food poisoning, fevers.
Asafoetida	Asafoetid	Hing	Dyspeptic condition, flatulance,colicy pain, wind in alimentary caught.
Asoka	Jonosia asoka	Leguniinous	Menstrual trouble,

		tree root	uterine tonic, troubles for uterus, endometritis.
Haptisia tinet Berberis vulg	Horse fly weed Barberis canadisia	Yellow broom Pipperidge bush	Enteric fever, Inter remitent fever. Conjestio, pain in joints, gouty, urinary colic, Vesical & renal calculii.
Bismuth	oxide white Bismuth		Gastro-enteritis, vomiting, pain acute diarrhea.
Bryonia alba	white bryony	cucurbitacca visits alba flowers	Fever, headache, cough, cold, dry gouty & rheumatoid condition, acute condition of lungs and respiration.
Cactus Grandiflorus	Night blooming cactus	Caotacea creeping roots	For heart troubles, palpitation, constriction. It is used for heart stimulating as well as inhibitory botic.
Calcarea card	Carbonate of lime		skin diseases, glandular effects, diseases of bones.
Callendula off	Marigold	Neel tooti	Used as the homeopath is iodine for external application for dressing the wounds and injuries, chronic ulcer. It is used both externally & internally
Camphor monobromata	Camphor	Natural camphor tree leaves	G.I. infection, cholera antipain stimulating agent.
Canabis indica	Herba canabisa indicus	Bhang, Ganja Hasis	It is used for insomnia, gonorrhoea discharge, used as sedative agent.

Cantheris	Cantharides	Spanish fly	Urinary tract infection on burn, loss of albumin from urine. Its ext.Q is used for the external application.
Capsicum ari	Capsicum	Red chilly	Cold remedy, for urinary trouble.
Cargo vegeta	Carbo legni	Vegetable charcoal	Dyspeptic condition, for collapse stage, flatulances. This is the best generating medicines.
Causticum	Tr.Causticum	-	Warty diathesis, chronic rheumatism, cataract of eye troubles.
Chelidonium magnus	Caladine	Tetter wort herb	Liver remedy, billiousness, hepatitis, jaundice.
Chininum	Quinine	White Quinine bark of peruvain	Malasia fever.
Cina	Artimisia santonica	Worm seed (palavi)	For worm, canine hunger, ascariasis.
Colocynthus	Colocynthus vulgari	Bitter cucumber Bitter apple	Colic pain, stomach ache, Intestinal colic.
Croton tig	Croton jamalgota purging nut	Jaiphal	Purging, fistulas, constipation
Chammomilla	Chamomile	Corn fever few	Dentition diarrhea, toothache irritability condition of animals.
Crotalus Hor. Crotalus Hor.		Rattle snake ophida	For yellow fever and dengue fever for heart troubles.
Digitalis	Digitalis purpura	Fox glove Fairy finger	Heart inhibitory medicines, for the use of palpitation.
Drosera	Drosera rotundifolic	Mukajali, Chitre	Cough, whooping cough.

Euphrasia	Euphrasia offi	Flower of E.califolic	Coryza from nose and eyes. Cold, conjunctivitis. It is used for the eye trouble as an external drugs.
Filix Mar	Aspideum filix	Male fern perineal herbs	Tapeworm, and thread worms.
Gelsimium	Gelsimium	Yellow jasmini	Fever, for heart palpitation, fearfulness, vasvagal attach.
Heper sulph	Heper	-	Abcess, inflation, hypersensitive condition, fever with inflammation
Hydrastica	Hydrastic canadus	Golden seal serineal herb	Cervicitis, sinusitis, endometis, Leuco rhea. It is used as external application in mother tincture forma.
Ipacoacuhae	Ipecac	Brown ipeccacus	Cough, vomitting, nau seatic condition anorexia.
Influentium	Nosodes form prepared from the nose smear suffering from influenza.		Influenza, sneezing coryza.
Graphitis	Plumbago carbo mineral	Graphite	Crack skins/nails, dry scabies etc. It is used as external application.
Ignatia	Ignatia bean	Feba febrifuga	Shock, grief, anxiety, Monose condition. It act on the mental symptoms.
Iodium Kalgmech	Iodine Andrographis	- King of bitter, kalmegh, Kiratae	Goiter, Thyotoxicosis. Hepatic mixture, for liver diseases, hepatic fever, hepatitis jaundice.
Lachesis	Lance headed viper	Viper serpent's poison's extract	Purpura haemorrhagica, septicimia and hyper pyrexia.
Lobelia	Ast ma roots	Indian Tobacco	Asthmatic troubles,

inflata			chronic bronchitis by spncea, respiratory troubles.
Lycopodium	Muscus clavatus	Vegetable sulpher	Liver diseases, impot ency, for gall stone & and gall bladder. Dyspepsia due to non fuctioning liver.
Mercurious solution	Quick silver Hg. sol.	-	Dysentery, syphilitic, skin diseases, desent eric fever, veneral diseases.
Mellifolium	Milfoil,yarrow	Achillea alba	For ear troble, otiits media.
Moschus	Moschus orienta	Musk(Mammalia)	Hysteria, coldness. It is a stimulating agents.
Natrum Mur	Sodium chooi chloride	Lavana	Chachessis, debility, Fever, chill, those craving for salty things. Loss of body fluid.
Nitric acid	-	-	Pain, cancrum oris, syphylitic pain as from spinter, ulcer chronic case.
Nur vomica	Strychnox Nur	Poison nut, Quaker,kuchila	It's polychrest remedy in hoeopathic, indige stion, dyspepsia, irritability, mental condition,haemorrhoids. It is mostly used in gastrointestinal ailments.
Opium	Opium thobaic cum	Affim,poppy	Constipation, appople tic,metabolic. It is used for the stimulating as well as inhibitory remedy for nervous phenomina.
Phosphorus	-	-	Neurotic syndromes, brain tonics. It is used for meabolic fuc tion, loss of phospho rus from body vital fluid.
plantago	Greater plantation Ribgrass	Luhuriza, isabgool	Otitis, odentitis, co nstipations. It is used for external app-

			lication in the form of mother tincture external.
Pulsatilla Nig	Pulsatilla patens	May flower prairie flower	It is also a polychrest remedy in homeopathic. Used most commonly in feminine gender. Menstrual troubles, Dyspeptic trouble, fever, headache, pain etc.
Rhododendrone chry	Rhododendron officinalis	Golden flower	For orchitis, hydrocele It is used to dissolve the fish bones stucked in throat, in a crude form, Epididimitis.
Rhus Toxicodendron	Poison Ash Rhus radican	Poison oak tree leaved ivy	Gout rheumatism, pain in joints lumbago, ailments due to wet in rain. Fever due to wet. Ulceration to cornea (pupil).
Rioinus communis	Castor oil plant	Eranda, Rerhi	It is used to increase the quality of milk in nursing animals.
Ruta grave	Ruta hortensis	Bitter herbs golden rue	Bone pain, arthrodosis, bruised pains. Acts upon the periosteum cartilages, tendons specially.
Sarsaparrilla	Sarsa, Smilax medica	Wild liquorice	Blood purifier, Skin diseases, urinary troubles, venereal diseases.
Silicea	oxide of silicon	Sio2	Abcess, chronic ulcer, to abort the inflammatory condition, to dissolve the fish bones, stucked in throat, for osteomyelitis.

Senega	Polugala senega	Rattle snake milkwort	Chronic bronchitis, difficult to dislodge mucus, rattling in throat.
Spongia	Spongia tosta	Porifera ceratospondiae	cold in head, swelling eyes. Used for skin diseases. Itching burning, relapsing fever, falling of hairs.
Sulpher	S.Flores sulpher	Flower of sulpher brime stone	It is used a polychrest remedy.Used for skin diseases, Itching burning, relapsing fever,falling of hairs.
Tabccum	Hyoscymus peruvinae	Tamaku, Tobacco,leaf	Palor, breathlessness, collapse vertigo,nauses, gastralgia.
Thuja occidenta	Arbor vitae cedr lycea	White cedar	Acts on skin, blood, gastrointestinal tract and brain.-It is a special remedy of warts.
Urtica urens	Urtica minora	Dwart nettle or small	Gout and uric acid diathesis, urticarra, allergy of skin.
Veratrum album	Helleborus album	White hellebora herb	Gastro-intestinal tract, for collapse stage due to purging.
Zingibar	Ammonium zingibar, Ginger	Adrak, Aduwa	Debility of sexual system and respiratory troubles. Digestive tract ailments.
Zincum	Zinc	-	Period of depression of diseases paralysis, spinal effections, choress.

UNANI Practices in Veterinary Medicine

Name of Medicines	Uses for Treatment of Diseases
Qurs Mubara k	Fever
Qurus shif a	Fever, Headache
Arak Exulab	Sunstroke
Qurs Nazala	Cold Cold and Vomitting
Arakq Ajeeb	Cough
Qurs Surf a	Vomitting, diarrhea and indigestion
Qurs Zahar Mohara	Vomitting, Indigestion, Headache, Dog
Araq Ajeeb	bite, Insect bite, Scorpion, Earache, Toothache.
Qurs Haiza	Diarrhea, indigestion
Sufoof chutki	Indigestion
Qurs Tinkar	Constipation
Habb. vsara	Constipation
Reward	Constipation
Qours huddar	Joint pain, backache
Roghan surfkh	Joint pain, backache, Sprains
Qurs siras	Headache
Marham kharish	Scabies, Ringworm, boils and abcess
Roghan kamila	Ringworm, Scabies, Cuts and scratches, Earache.
Marham Rat	Boils and abscesses, burns and scalds, buts, scratches, wounds ulcers.
Tiryak sumoom	Dog bite, Insect sting, Scorpion sting,
Sufoof Qummal	Lice
Qutoor Ramal	reeding, Eye Trouble.

Herbal Farms in Nepal

Name and Location of Farms	Name of Herbal Plants Supervised by Produced	
Tamagadi Herbal Farm Nijgad, Bara, Narayani Zone	a. Cytronella oil b. Pansoja oil c. Lemon grass oil d. Rawalfia oil	Herbal Production and processing company, limited
Shivapuri Herbal Farm, Shivapuri Dandy, Kathmandu, Bagmati Zone	a. Belladonna b. Pyrethrum c. Methapiparim	Same as above
Khaptad Herbal Farm Khaptad, Doti, Seti Zone	a. Bish b. Kiutaii c. Panchaunle d. Nangre e. Ganaune f. Ekimia	Same as above
Manichur Herbal Farm Sankhun, Kathmandu Bagmati Zone	a. Digitalis b. Belladonna c. Pyrethrum d. Menthapiparin	Departmental of Medicinal Plants.
Tistung Herbal Plant Farm, Makawanpur Narayani Zone	a. Pyrethrum b. Dioscorium	Same as above
Hetauda Herbal Farm Makawanpur, Narayani Zone	a. Cytronella oil b. Pama roja oil c. Lemon grass oil d. Rawalfia	Same as above
Tarhara Herbal Farm Sunsari, Koshi Zone	a. Cytronella oil b. Pamaroja oil c. Ranalphia	Same as above
Kanchanpur Herbal Farm Mahendra Nagar	Same as above	Same as above

Questionnaire

Traditional 'Veterinary Medicines

1. Name of the traditional practitioner:
2. VillageMunicipality.
3. How do you treat animals (the system which you use)
 - 3.1 Ayurvedic system
 - 3.2 Unani system
 - 3.3 Homoeopathic system
 - 3.4 Other system if any,
4. What are the different kinds of herbal (medicinal plants) available in your locality ?
 - 4.1 Name of plant
 - 4.2 Use of plants parts ..
 - Leaves
 - Flowers.....
 - Fruits.....
 - Others
 - 4.3 Type of animal diseases
 - Diarrhea
 - Fever.....
 - Others
 - 4.4 Dose of medicine
 - 4.5 Combination of medicine
5. Where did you get this training?
 - 5.1 In government training institute
 - Inside the country Outside the country
 - 5.2 Locally at home.....
 - 5.3 No training .
 - 5.4 Only by experience
 - 5.5 Others

