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An Overview Of Medicinal Plants Used In Wounds and respiratory infections

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Abstract

Ethnoveterinary practices involve the traditional beliefs, knowledge, practices and skills pertaining to healthcare and management of livestock .The present situation of considerate curative potential and immunomodulatory effects of different plants used in ethnoveterinary medicine. The great number of plants has been used in traditional ethnoveterinary medicines in the prevention and treatment of milder forms of infections, chronic diseases and persistent infections. One of the possibilities for stimulation of the functions of immune system is the submission of herbal preparations which can incite the function of the effectors protective cells and stress their protective capacities. Extracts from some plants acquire immune-stimulating properties and are able to enhance the exact and distracted resistance of the animal organism to pathogens and trauma. One of the most capable alternatives to classical antibiotic treatment is the use of plants for enhancing host defence responses and as potential growth promoters. Botanical compounds exhibits a number of valuable healing properties and also their usage is the significance for the animal welfare. This compounds have been used therapy to treat the respiratory, reproductive, urinary or nervous system. Many of plants have proved to be extremely are useful in several body systems.

Key words: ethnoveterinary medicines, livestock production, veterinary health care practices, livestock diseases .

Introduction

Ethnoveterinary medicine, the scientific term for customary animal health care, encompasses the knowledge, skills, methods, practices, and beliefs about animal health care found among the members of a community [7]. The knowledge base differs not only from region to region but also among and within communities. It has been developed through trial and error and deliberate experimentation[7]. The traditional knowledge of veterinary health care practices and drug preparations is handed down orally from generation to generation, therefore, it is less systematic

and less formulized specific preparations and mode of administration of the plant/plant's part for treatment of various disorders of livestock . Universally not recognized as a valid method of disease control in animals. In many countries, there has been little documentation of traditional knowledge; rather, it has been transmitted across generations by an oral tradition and therefore is in danger of extinction. Lack of records of ethnoveterinary practices makes it difficult to know how long a particular remedy has been in use and whether the preparation or administration method has ever been altered or not. Unlike conventional medicines, which are only approved for public use after carefully planned laboratory research followed by field trials on animals both for toxicology and effectiveness, ethnoveterinary medicines depend only on historical evidence of use as proof of safety and effectiveness[7-9] . Developed societies, especially those belonging to cultures derived from the dominant western European cultures, abandoned much of their traditional medical/veterinary practices in favour of what is now viewed as orthodox medicine. Loss of indigenous culture, in favour of Western European-derived culture, is an accelerating process among indigenous people around the world[8-10]**.** In recent years, however, increasing attention has been paid to ethnoveterinary knowledge and local veterinary practices [7] .There is a growing acceptance that some of these practices have therapeutic value, and that they should be documented before this knowledge is lost. The need to preserve a disappearing ethnoveterinary heritage is compounded by problems within the modern veterinary health sector in many African countries.

The supply of veterinary health services and medications is constrained by scarcity, erratic supply, and prohibitive cost. Although an extensive network of veterinary hospitals exists, a poor communication infrastructure and a shortage of manpower drives livestock owners to treat animals themselves, consult a local healer, or slaughter the animal if the cost of treatment becomes a significant proportion of the value of the animal [7,16].In view of these constraints, the search for alternatives becomes important. Ethnoveterinary medicine offers great potential for development, and provides a potential low-cost alternative or complement to allopathic medications [7,15].In many African societies, both conventional and traditional healing practices exist alongside each other. In many cases people consult both systems; the availability of a conventional veterinarian and the disease concerned are factors which determine whether an ethnoveterinary or conventional treatment is chosen[8-11,13]. For fractures, reproductive diseases, diarrhoea and fertility problems, traditional practices are generally preferred. Wounds, ticks, stomach ailments, intestinal worms, contagious pleuropneumonia (bovine and caprine), foot-and-mouth disease, (cowdriosis), liver fluke (fasciolosis), lumpy skin disease, nasal bot (fly larvae), pink-eye, abscesses, ringworm, respiratory diseases and fevers are believed to be best treated by synthetic medicine[8-11,14]**.** Infectious epidemic diseases, for example brucellosis, can best be prevented by using conventional vaccines.South Africa has a rich plant biodiversity with an estimated number of 24 000 plant taxa, representing around 10% of all plant species in the world [20] .The country incorporates one of the

six Floral Kingdoms of the world – the Cape Floral Kingdom. This diversity of flora is a rich source of herbal medicines for indigenous use. Approximately 3 000 plant species are used for medicinal purposes by an estimated 200 000 indigenous traditional South African healers. Up to 60% of the South African population consult one or more of the traditional healers in preference to/or in addition to Western medical doctors especially in rural areas [20].

Medicinal plants form an integral part of the culture of many South Africans [1] . Due to the availability, accessibility and affordability, there is an increase in the appreciation of the role of medicinal plants. Medicinal plants have been proven effective in cases of ill-health, including mental health, prevention of diseases, treatment of non-communicable diseases and improved quality of life in elderly people and in persons suffering from chronic diseases [21].Hundreds of plant species have been identified by traditional practitioners for treating a wide range of livestock ailments, although the efficacy of plant treatments has often not been tested through formal trials, and more work is required. Nevertheless, a large body of information on traditional use, over a number of centuries in many cases for indigenous plants, supports their utility for treatment and control [1].

Ethnoveterinary medicine

Ethnoveterinary medicine (EVM) deals with the folk beliefs, knowledge, skills, methods and practices pertaining to the health care of animals [8]. While traditional healers have less to offer in the treatment and control of epidemic and endemic infectious diseases like foot-and-mouth disease, rinderpest, septicemia, anthrax, bovine tuberculosis (TB), brucellosis and acute life-threatening bacterial diseases, they can cope with a reasonable spectrum of common diseases such as respiratory diseases, diarrhoea, wounds, colds, worms, coccidiosis, and reproductive disorders. [15-16]. Livestock owners often have an excellent information of ethnobotany, which has formed the basis for screening plant materials as potential sources of medical drugs[8-11].

History of medicinal plants use

The ancient written confirmation of medicinal plants' custom for preparation of drugs has been originate on a Sumerian clay slab from Nagpur, approximately 5000 years old. It comprised 12 recipes for drug preparation referring to over 250 various plants, some of them alkaloid such as poppy, henbane, and mandrake.[22] The Chinese book on roots and grasses "Pen T'Sao," written by Emperor Shen Nung circa 2500 BC, treats 365 drugs (dried parts of medicinal plants), many of which are used even nowadays such as the following: *Rhei rhisoma*, camphor, *Theae folium, Podophyllum*, the great yellow gentian, ginseng, jimson weed, cinnamon bark, and ephedra.[22,23] The Ebers Papyrus, written circa 1550 BC, represents a collection of 800 proscriptions referring to 700 plant species and drugs used for therapy such as pomegranate, castor oil plant, aloe, senna, garlic, onion, fig, willow, coriander, juniper, common centaury, etc.[35,36] In ancient history, the most prominent writer on plant drugs was Dioscorides, "the father of pharmacognosy," who, as a military physician and pharmacognosist of Nero's Army, studied medicinal plants wherever he

travelled with the Roman Army. Circa 77 AD he wrote the work “De Materia Medica.” This classical work of ancient history, translated many times, offers plenty of data on the medicinal plants constituting the basic *materia medica* until the late Middle Ages and the Renaissance.[27,28] Dioscorides deemed that it had abortive action, on which he wrote, “The flower, root, and the entire plant accelerate menstruation, the release of the embryo, and the discharge of urine and stone, provided that they are used in the form of an infusion and baths.” This untrue belief was later embraced by both the Romans and the Arabs; hence the Latin name *Matricaria*, derived from two words: *mater* denoting “mother,” i.e. matrix, denoting ‘uterus’. Dioscorides differentiated between a number of species from the genus *Mentha*, which were grown and used to relieve headache and stomach ache [34].

Pliny the Elder (23 AD-79), a contemporary of Dioscorides, who travelled throughout Germany and Spain, wrote about approximately 1000 medicinal plants in his book “Historia naturalis.” Pliny's and Dioscorides’ works incorporated all knowledge of medicinal plants at the time [24].In Homer's epics The Iliad and The Odysseys, created circa 800 BC, 63 plant species from the Minoan, Mycenaean, and Egyptian Assyrian pharmacotherapy were referred to. Some of them were given the names after mythological characters from these epics; for instance, Elecampane (*Inula helenium* L. Asteraceae) was named in honor of Elena, who was the centre of the Trojan War. As regards the plants from the genus *Artemisia*, which were believed to restore strength and protect health, their name was derived from the Greek word *artemis*, meaning “healthy.”[24] Herodotus (500 BC) referred to castor oil plant, Orpheus to the fragrant hellebore and garlic, and Pythagoras to the sea onion (*Scilla maritima*), mustard, and cabbage. The works of Hippocrates (459–370 BC) contain 300 medicinal plants classified by physiological action. Wormwood and common centaury (*Centaurium umbellatum Gilib*) were applied against fever; garlic against intestine parasites; opium, henbane, deadly nightshade, and mandrake were used as narcotics; fragrant hellebore and haselwort as emetics; sea onion, celery, parsley, asparagus, and garlic as diuretics; oak and pomegranate as adstringents.[25,26]In the seventh century AD the Slavic people used *Rosmarinus officinalis, Ocimum basilicum, Iris germanica*, and *Mentha viridis* in cosmetics, *Alium sativum* as a remedy and *Veratrum album, Cucumis sativus, Urtica dioica, Achilea millefolium, Artemisia maritime* L., *Lavandula officinalis, Sambuci flos* against several injurios insects, i.e. louses, fleas, moths, mosquitos, and spiders and *Aconitum napellus* as a poison in hunting.[25] While the old peoples used medicinal plants primarily as simple pharmaceutical forms infusions, decoctions and macerations in the Middle Ages, and in particular between 16th and 18th centuries, the demand for compound drugs was increasing. The compound drugs comprised medicinal plants along with drugs of animal and plant origin. If the drug the theriac was produced from a number of medicinal plants, rare animals, and minerals, it was highly valued and sold expensively.[24,25].

Early 19th century was a turning point in the knowledge and use of medicinal plants. The discovery, substantiation, and isolation of alkaloids from poppy (1806), ipecacuanha (1817), strychnos (1817), quinine (1820), pomegranate (1878), and other plants, then the isolation of glycosides, marked the beginning of scientific pharmacy. With the upgrading of the chemical methods, other active substances from medicinal plants were also discovered such as tannins, saponosides, etheric oils, vitamins, hormones, etc.[29] In present days, almost all pharmacopoeias in the world Ph Eur 6,[30] USP XXXI,[31] BP 2007[32] proscribe plant drugs of real medicinal value. There are countries (the United Kingdom,[32] Russia, Germany[33]) that have separate herbal pharmacopoeias. Yet, in practice, a much higher number of unofficial drugs are always used. Their application is grounded on the experiences of popular medicine or on the new scientific research and experimental results .Many medicinal plants are applied through self-medication or at the recommendation of a physician or pharmacist. They are used independently or in combination with synthetic drugs .For the sake of adequate and successfully applied therapy, knowledge of the precise diagnosis of the illness as well as of medicinal plants, i.e. the pharmacological effect of their components is essential. Plant drugs and phytopreparations, most commonly with defined active components, verified action and, sometimes, therapeutic efficiency, are applied as therapeutic means.

Why was ethnoveterinary medicine not accepted presumptuous upon the arrival of Synthetic medicine?

Once considered a poor man's affairs, sinful, out-dated and witchcraft, the folk veterinary medicine and customary medicine in general have currently emerged, as [12] describes, 'very productive fields' that are really capable to benefit the entire inhabitants in the world. As compared to traditional animal health care developed and practised through trial and error methods and deliberate experimentation and is therefore less documented, systematic, formalized and not universally recognized and for these reasons, it has had no place in mainstream veterinary medicine [7].

While time immemorial, ethnomedicine has existed with human beings as a sort of intellectual art of health and practice that helps individuals solve all health-related problems. Interactions between people with different cultural development lines, have resulted in acceptance and rejection of certain traditional health practices that are important to the survival of human. With the arrival of modern medicine and continued ethnocentric interactions, some of these vital traditional health practices were completely abandoned without considerations until the turn of 20th century is when it was realized that some vital traditional health information was left behind and need to be retrieved, due to the development of various infections and pandemics. [14] .

Why a resurrection of interest in the Ethnoveterinary medicine in South Africa?

The panic that valuable customary health methods, practices and many other vital ethnotherapeutic agents of healing are decaying and declining at a very high rate and yet their potential contribution to health in rural and Simi-urban communities worldwide, are beyond dispute. This is manifested in

high rates of plant species extinction as a result of environmental degradation and death of true forest people who have the required traditional knowledge, without information being documented and evaluated[50].Some local people have stated to also use invasive alien species.South Africa is a country consisting of a wide range of plant species. About 24 000 plants are found in this region, and it is also estimated that over 60% of the country's population use plants as medicine. Most of the people who use plants as medicine belong to the African ethnic groups, and the knowledge of medicinal plants including ethnoveterinary medicine (EVM) has been passed on from generation to generation and kept as a secret amongst different ethnic groups. Traditional herbal therapeutics have in certain cases been proven efficacious by the standards of both history and modern medicine. Plants used in folk medicine have many applications in Western scientific medicine, for example quinine, picrotoxine, strophantine, aspirin, opium, hashish, ephedrine, curare and *Rauwolfia serpentina*[2] .

Herbs such as *Combretum mucronatum* and *Mitragyna stipulosa* are considered drugs of choice for the treatment of Guinea worm disease [6] . Systematic studies on EVM can be justified for three main reasons: they can generate useful information needed to develop livestock healing practices and methods that are suited to the local environment, EVM could be a key veterinary resource and could add useful new drugs to the pharmacopoeia, and EVM can contribute to biodiversity conservation. Besides, the overlap between natural resources traditionally used as medicines for both humans and animals may be indicative of the efficacy of these remedies[19]. Particularly among poor stock raisers or those in remote locations who can neither afford nor have access to expensive or distant conventional healthcare options, validated EVM techniques may be the most realistic choice [7]. Whether for poor or rich stock raisers, depending on their production systems and market conditions, the value of the animals in question may not warrant the cost of professional veterinary care and inputs. Traditional animal health care practices, referred to as ethnoveterinary medicine, provide low cost alternatives in situations where Western type drugs and veterinary services are not available or are not affordable[7,15] . Stock raisers may be uncertain about their indications, dosages, and even modes of administration. Dangers here include not only the obvious ones for patients but also the problem of escalating antimicrobial resistance [7].

Evolving significance of Ethnoveterinary Medicine in present Times

Despite these disadvantages, ethnoveterinary medicine is freely available or at a cost in proportion to the value of the animal that is beneficial. It is easily administered, usually orally or topically. It has little or no resistance effect compared to modern veterinary practices and it can be practiced almost by everyone as no western knowledge is required.EVM is particularly important in developing countries where conventional remedies for animal health care are inaccessible or simply unaffordable to poor rural farmers [16] .According to the World Health Organization (WHO) [21], at

least 80% of the people in developing countries depend largely on traditional practices for controlling and treating various diseases affecting both humans and their animals.

Plant derived medications constitute a rewarding area of research, particularly in countries such as South Africa which have a rich biodiversity of natural plant resources coupled with a high prevalence and variety of infectious diseases. The characteristics, sophistication, and intensity of the ethnoveterinary systems differ greatly among individuals, societies, and district. Hence, documentation of ethnoveterinary medicine from the rural areas of South Africa with its rich ethnographic and biodiversity setting would be of great significance. Traditional knowledge of ethnoveterinary medicinal plants and their use by indigenous cultures is not only useful for conservation of cultural traditions and biodiversity but also for community healthcare and drug development in the present and future [19]. Livestock owners have an excellent knowledge of ethnobotany, which has formed the basis for screening plant materials as potential sources of medical drugs. In many developing countries, herbal medicines are of vital importance in primary health care [18] .This is supported by literature in behavioural and pharmacological sciences with animals and people using a number of different plants for the control of disease symptoms and related illnesses in their environment [16,19] .Documentation of indigenous knowledge and evaluation of the use of plants for a variety of purposes assume greater significance, not just to retain it, but also to keep it alive and make it available for future use because of rapid socio-economic and cultural changes that are taking place across the traditional community of South Africa [16]. The native information and custom based on locally accessible biowealth are successful to cure infections and are effortlessly administrable as seems from the practices that have been carried out [1,15,19] Individual interest in growth in exhaustion of the plant resources of the nature and rapid transformation of resourceful systems have steadily replaced the ancient but efficient system of ethnic medicine [39]. Animal husbandry sub-system is well developed in ethnic communities likewise they do not have reach to current medical facilities as well as the extent of reach of modern medicine still eludes them due to various reasons.

The role of plants in ethnoveterinary medicine

Human beings and livestock have coexisted for generations from ancient times and vast amount of traditional knowledge gained over centuries of experience in animal healthcare can still be observed today. According to the World Health Organization [21], at least 80% of people in developing countries depend largely on indigenous practices for the control and treatment of various diseases affecting both human and their animals. The plant based traditional medicine systems continue to play an essential role in health care, with about 80% of the world's farmers, shepherds and animal growers relying mainly on traditional medicines for treating routine maladies for their livestock[37,38]. In animal health care, the use of plants as supporting curative in protective

purposes or as a complete treatment has a massive potential regardless whether it is the individual or combined plant medicinal preparations which act synergistically. It is promising to through medicinal action of plants into certain direction to alleviate their achievement by combining certain features of some plants in their preparations [15]. In plants treatment whole plants are used, then their parts drugs with formation of controlled drug and drugs without formation noncell drug, ingredients and preparations. Teas, decoctions, extracts tinctures, macerations, solutions, syrups, bathing soaps, creams, lotions, pills, tablets are prepared from medicinal and other plants [39]. In veterinary medicine the use of some forms of plants is to a certain degree limited because of the absence of cooperation with the patient on one hand while on the other the forms intended exclusively to animals are not available currently [39]. Botanically associated plants predominantly fabricate chemically comparable, but not the equivalent metabolites, therefore their pharmacological effects are related, but they cannot substitute one another in prevention and treatment of human and animal diseases [6]. Plants treatment very intensively used in with the purposes with the intend of treatment of insignificant forms of infections, chronic diseases and recurrent infections as well as in unprocessed livestock production. Plant extracts, essence, and vegetable, animal and mineral substance have advantage over synthetic-chemical veterinary preparations in organic livestock production in case they ensure positive curative effects in animals [15].

The role of plants in reinforcement the individual resistance to infections

Research interest has decisive on a variety of herbs that possess immune stimulating properties as a valuable attribute in helping diminish the risk of infections in both human and animals as prevention is better than cure. In different herbs have been identified such as the flavonoids, lignans, terpenoids, polyphenolics, sulfides, saponins, carotenoids, curcumins, plant sterols and phthalides [49].Studies impressively propose that garlic is a promising candidate as an immune modifier, which conserve the homeostasis of immune functions [48]. because it has a higher concentration of sulfur combinations which are responsible for its curative effects.

Plants are rich in flavonoids, vitamin C, or the carotenoids so can improve immune system. Their favourable effect named as anti-inflammatory and as an immune stimulant action. It can promote the activity of lymphocytes, increase phagocytosis, and encourage interferon production. These herbs are members of the *Allium* family like garlic, members of the Labiatae (mint) family, members of the Zingiberaceae family like ginger and members of the *Umbelliferae* (carrot) family [49] . The most strict concentration in animal health care is dedicated to avoidance of diseases based, among other things, on raising animals in accordance with their demands and needs in order to achieve maximum resistance towards diseases and protection against infections [39] as such not given care could result in the outbreaks of diseases. The effects of submission of vegetable preparations are predominantly focussed towards stimulating some individual systems and enhancing their protective abilities.

Antimicrobial activity of plants

Past years livestock production was the use of antibiotics as growth promoters which were applied in doses smaller than curatively. Curative doses of antibiotics destroy a great number of pathogens and promote the growth of useful microflora. The obtained effect is to prevent production of bacterial toxins with simultaneous reduction of food consumption and immuno stress because more nutritive ingredients are directed towards growth and production instead of to mechanisms for strengthening the resistance of organism [39].

At the present time several drug resistance has developed due to the unsystematic use of commercial antimicrobial drugs commonly used in the treatment of infectious disease. In addition to this problem, antibiotics are sometimes associated with adverse effects on the host including hypersensitivity, immune-suppression and allergic reactions. This situation compel scientists to search for new antimicrobial substances with no side effects. Given the alarming incidence of antibiotic resistance in bacterial and viral of medical importance, there is a constant need for novel and efficient curative agents. Therefore, there is a need to develop alternative antimicrobial drugs for the treatment of infectious diseases from medicinal plants[51]. Antimicrobials of plant origin have enormous therapeutic potential. They are effective in the treatment of infectious diseases while simultaneously mitigating many of the side effects that are often associated with synthetic antimicrobials. The beneficial medicinal effects of plant materials typically result from the combinations of secondary products present in the plant. In plants, these compounds are mostly secondary metabolites such as alkaloids, steroids, tannins, and phenol compounds, flavonoids , steroids, resins fatty acids gums which are capable of producing definite physiological action on body. Compounds extracted from different parts of the plants can be used to cure diarrhea, dysentery, cough, cold, cholera, fever bronchitis etc.[52,53]. The use of vegetable or fruits provision does not lead to the resistance of pathogenic microorganisms, there are no residues in the food and they are completely safe.

Respiratory disease

Respiratory disease is a medical term that encompasses pathological conditions affecting the airways, including nasal passages, bronchi and lungs. They range from mild and self-limiting, such as the common cold, to acute infections such as bacterial pneumonia, respiratory flu, bronchitis, tonsillitis, influenza, TB and chronic conditions like asthma or chronic obstructive pulmonary disease[64-66].

Bovine TB is a disease caused by *Mycobacterium bovis*. Bovine TB usually affects animals such as cattle, but it can affect practically all mammals, causing a general state of illness, coughing and eventual death. It can be transmitted from animals to humans as well as to other animals. In many animals the disease is most often caused by a species of *Mycobacterium* that has adapted to the

host animal species[64-66] .The main symptoms of these disorders are often very similar and are manifested in the following ways including cough, fever, throat, ear and muscle aches, general malaise and tiredness. Respiratory tract infections continue to be a major health challenge worldwide especially due to the increasingly fast development of resistance to the drugs currently in use [64-68] . Respiratory disease places a huge economic burden not only for the families of patients, but for communities in general, including livestock lives and financial costs related to travel to healthcare facilities and medicines[16].

Treatment of respiratory infections by plants

In South Africa, many antimicrobial studies on plant use against respiratory ailments have been conducted on previously reported uses [63-68] , and the few ethnobotanical surveys that have been conducted, aimed on gathering knowledge from traditional healers only[64].Hardly any studies, have focused on finding information directly from the livestock owner about the animals health which can minimise the outbreak. Novel information gathered from surveys study is important in preserving indigenous knowledge on human health while animal health information is no considered important. While most of the ethnobotanical studies on South African medicinal plants used to treat respiratory illnesses have focused on plant species with possible antimycobacterial properties [63-68], few such studies have included the Synergistic treatment and the toxicity of the synergy between the plants or plants and antibiotic, specifically focused on antimicrobially analysing plants against other organisms associated with respiratory diseases [63-68].The following plants show potentials Artemisia afra, Euclea natalensis, Aloe marlothi commonly used in South Africa for enthoveterinary respiratory disease with other native and invasive alien plants.

Wounds

Wounds are physical, chemical or thermal injuries that result in an opening or breaking in the integrity of the skin, and may also be defined as the disruption of anatomical and functional integrity of living tissue . Wounds are physical injuries that result in an opening or break of the skin that causes a disturbance in the normal skin structure and purpose [46].They result in the loss of continuity of epithelium with or without the loss of fundamental connective tissue[46,47]. Wounds that exhibit impaired healing, including delayed acute wounds and chronic wounds, generally have failed to progress through the normal stages of healing. Such wounds frequently enter a state of pathologic inflammation due to a postponed, incomplete or uncoordinated healing process. The acute wound healing process is a complex series of inter-related events that are mediated in different phases by a wide range of chemically coordinated cellular processes, as well as hormonal influences. It is characterized by a sequence of independent and/or overlapping events[44,45]. Wound healing agents are agents that can stimulate fibroblast proliferation, induce keratinocyte proliferation and differentiation, increase collagen formation, exhibit antimicrobial antioxidant and anti-inflammatory properties. In most cases, for an agent from medicinal plants or a natural product

to be classified as a good wound healing agent, it should possess two or more of the above properties[44]

Treatment of skin infections by plants

Synthetic products, e.g. the pyrethroid insecticides that are related to the natural pyrethrines imitative from *Chrisantemum cinerariaefolium,* are extensively utilized in therapy for skin infections, particularly for ectoparasites in farm. animals[43]. *Curcuma zedoaria* rhizome showed significant wound healing activity on excision wounds, signifying an increase in wound contraction, tissue epithelialization, and proliferation of collagen fiber. It also exhibited significant anti-inflammatory activity and inhibited carrageenan and formalin-induced paw edema [41].The slick extract of *Hypericum perforatum* L is used superficially in a variety of skin and mucous covering wounds as well as in burns [39].

The juice obtained by crushing the sambucus leaves *Sambucus ebulus* L is applied straight at the place of the snake bite or a bee sting, and thanks to its antiinflamatory action the root and leaf of this plant are utilized for the cure of burns, inflammations, oedema, eczema and urticaria [40]. *Ficus carica* bark demonstrated significant wound healing activity on excision and incision wound models with improvement of wound contraction, duration of complete epithelialization, and tensile strength [42].

Synergistic treatment

In numerous ethnobotany/ethnoveterinary survey that have been conducted in South Africa it has been establish that certain plant species are used in combination with one or more other plant species to treat infectious diseases [54-60]. Even though plant combinations are often used to treat infectious diseases, the pharmacological confirmation of such remedies has been neglected [61,62] . One core endeavour of synergy research in the field of phytomedicine is to scientifically explain the treatment success of certain herbal remedies[15,61], and understanding the synergy involved in traditional medicine could validate their use in combination treatment. Understanding the synergistic mechanisms of such remedies could also be of great significance to drug discovery [61,62]. In traditional medicine the combination of plant extracts are claimed to cause enhanced effectiveness through synergistic effects within the combination [54-59]. African traditional healers often combine different plant parts or species for enhanced efficacy, and single plant remedies are rarely used [61]. Throughout the 20th century efforts have focused on the one-target, one-drug concept, in which it was significant to find a single chemical entity able to inhibit a distinct molecular target [69] . It has directed to the isolation of some flourishing single-molecule compounds from various diverse plant species [61,69] This occurrence might be due to synergistic interactions between compounds

found within such plant extracts, and in traditional medicine the traditional health practitioner use combination of plants for single infections. There has been a slow progress away from this single drug paradigm [16,69]. Various illnesses encompass of a multipart pathophysiology and a multicausal aetiology [61] which has led to the use of combination treatment. The value of multi-molecule treatment can't be ignored and, just like the ancient healers, modern livestock owner have exposed that combinations of different medicinal compounds could be much more efficient than a single agent [61,63,65,69] ,as some work on the symptom and other treat the course of infections. Several efficient pharmaceutical treatments are drugs combinations, and even the extremely specific molecules that target single proteins are barely ever observed as single entities [69]. Some of the most dangerous diseases like TB and pneumonia are being treated through the application of multidrug treatment . Tuberculosis would, for example, reach global epidemic proportions without the multidrug approach currently in use ionazid, rifampicin, pyrazinamide and ethambutol [61,62]. Many such drug combinations have been formulated from separate single compound drugs which mostly isolated from plants. These antimicrobial screenings should be followed by the identification and separate analysis of the active compounds. In the case of the mixed remedies, further combination studies should involve combining these plants' active compounds with each other, and analysing the antimicrobial interaction between such compounds. Essential oils, for example, can contain more various compounds in any given plant, and any of these compounds could interact to reduce or enhance pharmacological effects [61].

CONCLUSION and Recommendations

The research gives plants most recurrently used in ethnoveterinary medicine, but the number of plant species which are productively used in the prevention and treatment of animal infections is extreme greater. The use of certain medicinal plants can be revealed to be rational in terms of the known biological effects of the plants involved. Plants treatment is one of the ancient and the most commonly broaden systems of treatment based on the use of plants regardless whether the healing properties of certain plants have been scientifically confirmed or not. The chain of transfer of ethnoveterinary knowledge from generation to generation may, therefore, be broken if not documented properly. This endangers the knowledge of ethnoveterinary medicines while it is still freely available. Comparative studies should be carried out in various regions of the country to provide a comprehensive database on ethnoveterinary medicinal plants and ethnoveterinary practices. Scientific findings on active ingredients, mechanisms of action and application of certain plants preparations are motionless imperfect, therefore it is necessary to intensify phytochemical and phytophamacological research on unsatisfactorily considered plant species. The pharmacological actions of ethnoveterinary medicines should be studied and properly documented.

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