

# A View on Herbal Therapy with Veterinary Medicine Perspective

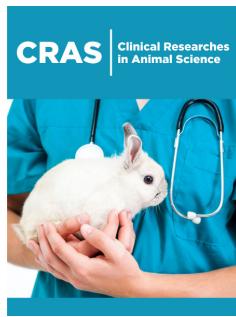
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## Abstract

Today, some parts of patients, practitioners, and animal owners tend to prefer herbal medicine in veterinary practice and human medicine, to avoid the side effects of commercial pharmaceuticals. Therefore, interest in herbal medicine is getting an increase. This review aimed to evaluate herbal medicine and its place in veterinary medicine from the past to the future



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## Introduction

Historical documents indicated that the ancient civilizations of India, China, Greece, Arabic countries had predominantly used plant-based medicine [1]. Similarly, many people prefer herbal medicine for primary health care worldwide in modern times. In some developing and developed countries such as China, Africa, Germany, India the traditional or folkloric medicine systems are predominated recently [2]. Herbal medicine called with different names; Ayurvedic Medicine in India, Allopathic Medicine in Greece and Traditional Chinese Medicine in China [3]. India is one of the most herbal medicine applied region of the world and there is "Jaributtis" culture to treat different diseases with their local herbal plants. Herbal practitioners are also called with various names according to region such as Vaidia (Bihar) Ojha (Jharkhand) Vaidhyaraj (Gujarat) Gunies (Rajasthan) Dangabhagat (Maharashtra). Tribal doctors, bare footed doctors, herbal doctors, tribal medicine men, folk healers, folk and laymen practitioners are other names of them in India. In addition, herbal medicine practitioners are recognized as traditional health practitioners by some international organizations, such as World Health Organization (WHO), World Wide Fund for Nature (WWF) [1].

Ayurveda is the oldest known medical system, originated in India. "Nakul Samhita" was written between 4500 and 1500BC, might be the first medical writing on the treatment of animals with herbs [4]. Chinese veterinary medicine is another ancient discipline and includes acupuncture and herbal medicine. The history of traditional Chinese veterinary medicine, dates back to the Three Emperors era, nearly 10,000 years ago [5]. Also, Chinese emperor Shen Nong has compiled one of the oldest Materia Medica which is known as Herbal Classic of Shen Nong, contains herbs used for both humans and animals [4].

There are strong fundamental and practical relationships between natural chemical drugs and herbal medicine. Inspired opinions and the scientific view can support improving of medical vehicle for life-threatening diseases. Development of new and effective drugs could be provided by herbal medicine knowledge. The unification of western and eastern medicine has a crucial role to achieve this goal [3].

Veterinary Herbal Medicine is a wide, valid, illuminating field in the usage of plants in the animal clinical practice. Nearly 2.3 million adverse effects were reported against approximately 6000 commercial drugs between 1969 and 2002. Focusing on the medicinal plants and exploring new alternatives to chemosynthesis have a great potential for rescuing the pharmaceutical industry [6].

Ethnoveterinary studies provide conservation of knowledge regarding medicinal plants and serves as an exploration method of alternative treatment options. A recent ethnoveterinary study suggests that the use of some plants could contribute to international strategies for reducing antibiotic use [7].

A web-based study revealed that three out of four veterinarians used herbal products in their clinical practice which are located in Germany, Austria and Switzerland, the same study showed that herbal drugs were generally preferred in chronic diseases and the only reported disadvantage of them was lack of information regarding use of herbal products [8].

The clinical effect and reliance of herbs did not be evaluated adequately for clinic diseases on animals, yet. But raises questions about whether natural products could be good source of drugs and could be find a place in current medicine innovation [6]. However, it is clear that medical herbs are effective, promotive and therapeutic applications [9]. Herbal medicines show their effects with different mechanisms. Common modes of action of plant originated medicinal products have been reported as suppression or stimulation of enzymes; changes in drug transport systems; increasing the release of bile into the intestine; increasing the metabolism rate and gastric motility; regulation of digestive system with different ways (e.g. decreasing secretion of hydrochloric acid and gastrointestinal transition, rising in blood circulation to the gastrointestinal tract, changing in the membrane permeability of intestinal epithelial cells...); changing some physicochemical properties, such as solubility, hydrophobicity, pKa; influencing receptors and other drug target sites [10].

The term 'Yogvahi' has been used for indicating herbs that able to enhance plasma concentration of drugs in Ayurvedic medicine. Piperine is the first scientifically validated example of Yogvahi and derived from black pepper. An Ayurvedic preparation called Trikatu which includes a mixture of black pepper, long pepper, and ginger has prescribed for various diseases [10].

Another compound, which is cultivating and using for centuries in medicine, is hemp (*Cannabis sativa*). Five hundred chemicals, for example Phyto cannabinoids, terpenes, flavonoids, amino acids, fatty acids, vitamins, macro-, and micro-elements and more were detected in Cannabis. It is effective on a lot of pathological conditions in humans and animals. Dried hemp is used for epilepsy, pain, anxiety disorders, inflammation, anorexia, nausea, emesis, and some others. The plant extract can use as second approved treatment alternative when unsuccessful conventional treatment in some countries [11].

However, there are a lot of numbers of reports about herbs in animal health. For example, some herbs such as Astragalus, virgin coconut oil, Ginseng stem-and-leaf saponins (GSLS), Echinacea purpurea, Astragalus polysaccharides (APS), Garlic powder, Myrtus communis oil, Turmeric, Thyme, and Curcumin can enhance the protective effect or host response for the vaccine of avian influenza virus in poultry species [12].

As a neglected tropical disease (NTD) Cutaneous Leishmania still has high morbidity and mortality in developing countries. In a recent study, *Urtica dioica* extract has shown significantly anti-

leishmanial activity both *in vitro* and *in vivo* [13]. Also, Herbal treatment has a great possibility to treat postpartum uterine diseases in cows [14]. *Allium cepa*, *Azadirachta indica*, *Curcuma domestica*, *Piper nigrum*, *Trachyspermum ammi*, *Trigonella foenum-graecum*, and *Zingiber officinale* have several positive effects on well-being of animals [15].

On the other hand, some toxic effects were reported for herbal medicines. Hepatotoxicity (*Lantana camara*, *Hypericum perforatum*, *Senecio*, *Crotalaria* etc.) and renal failure (*Datura stramonium*, castor oil, *Amaranthus retroflexus* etc.) were indicated regarding some herbal drugs. The government of India established a separate department in 2014 called AYUSH under the Ministry of Health and Family Welfare, which is dedicated to monitoring activities of herbs and related products. WHO (1998) published several guidelines regarding quality control of herbal drugs, which are aim to ensuring the stability and shelf life of products and also the quality of raw material and final product? Herbal drugs should also be evaluated in terms of any contaminants and pesticide residues [1].

## Conclusion

Herbal medicine has an ancient history. Although there are still some opposite ideas about intended and side effects of herbal drugs, there is an increased trend for usage of natural products both in human and animal practice. However, detailed *in vitro* and *in vivo* scientific studies are needed about effectiveness and safety of herbal drugs in particular diseases and different animal species. Also, veterinarians and animal owners should be well informed regarding advantages, adverse effects and safely usage of herbal medicines. In this review, herbal medicine and its place of past to future was evaluated.

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