

# An Alternative for Canine Atopic Dermatitis: Herbal Medicine

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## Abstract

Plants have been used for the treatment and prevention of various diseases and infections in animals and humans for centuries. Dermatological problems are one of the most common problems encountered by small animal practitioners. There are many studies regarding the usage of plant originated medicines for the therapy of skin problems in dogs. Canine atopic dermatitis represents more than half of the dermatological problems in dogs. The aim of this review was to show that there is some evidence new and safe treatment alternatives could be provided by herbal medicine in cAD which needs lifelong therapy.

**Keywords:** Canine atopic dermatitis; Plants; Herbal medicine

## Introduction

Plants have been used for treatment and prevention of various diseases and infections in animals and humans for centuries [1]. Popularity of the medicinal herbs have increased recently, because of the belief that herbs are cheaper and safer than conventional therapies. There are between 50.000 and 70.000 herb species used for medicinal purposes around the world, currently [2]. Herbal remedies have a wide range of applications such as digestive diseases, parasitic diseases, urogenital diseases and skin disorders [1-3].

Dermatological problems are among the most common problems encountered by small animal practitioners and these problems include a series of diseases such as otitis, pyoderma, anal sac problems, flea allergy, atopic dermatitis etc [4].

Dogs with atopic dermatitis represent just about 58% of the dogs which are affected by dermatological problems. Canine Atopic Dermatitis (cAD) has a complex and poorly understood pathogenesis. Both genetic and environmental factors are contributing to the development of the disease which is characterized by chronic skin inflammation, pruritis, and recurrent skin infections [5]. Allergen-specific immunotherapy (ASIT) is the only aetiological treatment option for cAD and has several routes of administration including subcutaneous (SCIT), intralymphatic (ILIT), and sublingual (SLIT). Based on the results of a recent study ILIT route has been found the most effective treatment to reduce clinical signs associated with cAD, currently [6]. There are other available therapeutic options for the treatment of cAD. Topical therapies mainly aim to moisturizing the skin, reducing the inflammatory response and repairing the skin. Systemic treatment strategies include treatment and prevention of flares. Main systemic therapeutics consists of several drugs such as glucocorticoids, cyclosporine and oclacitinib. However, due to the costs and side effects of these drugs, there is an increasing interest to find out alternative therapies that have low toxicity and high efficacy [5].

There are many studies regarding the usage of plant originated medicines for therapy of skin problems in dogs. The use of long-term antimicrobials is one of the major problems in humans and dogs with atopic dermatitis because bacterial resistance can become. Therefore, researchers are investigating alternative therapies that could prevent and treat bacterial infections [7].

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A recent study evaluated four medicinal plant (*Calendula officinalis*, *Hypericum perforatum*, *Matricaria chamomilla*, *Salvia officinalis*) for topical treatment of canine dermatological problems. All four plants have shown antibacterial and antifungal effects and considered as an option for topical application. *Calendula officinalis* (Calendula) has shown fibro-proliferative, pro-angiogenic and collagen enhancing effect confirmed with *in vitro* and *in vivo* studies. It could be used topically to promote wound healing in atopic dogs. *Matricaria chamomilla* (Chamomilla) has shown anti-inflammatory effects and relieved pruritus when applied topically [8]. Due to these properties, it could alleviate symptoms associated with cAD. According to another study, 0.1% boldo (*Peumus boldus*) and Meadowsweet (*Spiraea ulmaria*) plant extract combination has shown a positive effect on bacterial burden both clinically and bacteriologically, as well [7].

Chinese herbal formula Pei Tu Qing Xin (PTQX) has evaluated for the treatment of atopic dermatitis on a mouse model and the findings showed that PTQX regulated Th2 / Th17 cell equilibrium and suppressed mast cell infiltration while efficiently alleviating inflammatory response and pruritis [9]. These results promising for the long-term management of cAD.

On the other hand, a herbal complex NI-01, which is composed of different parts of six herbs (*Cinnamomum cassia*, *Lonicera japonica*, *Paeonia suffruticosa*, *Schisandra chinensis*, *Arctium lappa*, *Elsholtzia ciliate*) has studied to investigate *in vivo* topical therapeutic effects on atopic dermatitis. Results stressed that NI-01 relieves atopic dermatitis symptoms by inhibiting the infiltration of inflammatory cells and thus decreasing atopic dermatitis-induced stress [10].

## Conclusion

These examples show that there is some evidence new and safe treatment alternatives could be provided by herbal medicine in

cAD which needs lifelong therapy. However, it should be considered that further and detailed scientific studies performed with different doses, application periods, and administration routes in dogs with cAD are still needed.

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