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# Effect of *Sulphur* at 30 CH Combined with Allopathic Treatment in Canine Demodicosis

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**Abstract:** The objective of this work was to evaluate the effect of Sulfur at 30 CH combined with allopathic treatment in canine demodicosis, in the municipality of Camagüey, Cuba. The investigation was carried out, with dogs that received treatment for skin diseases, belonging to the municipality of Camagüey, Cuba. An open, non-sequential, randomized phase II clinical trial was conducted from a sample of 60 canines of both sexes, of the breeds: Pit Bull, Shar Pei, German Shepherd; Dalmatian and Mestizo, aged between two months and two years; classified as sick animals due to demodicosis, during the 2013-2016 period; The experimental population was divided into two randomized groups, each group consisting of 30 canines. A Chi-square analysis was performed to compare the proportions of the groups in the study according to the asymptomatic, improved, recurrence categories. The combination of Sulfur at 30 CH with allopathic medications proved to be effective in the recovery of animals, not showing recurrence in treated patients, demonstrating that homeopathic remedies act on vital energy. It was shown that the use of homeopathic remedies Sulfur at 30 CH, combined with allopathic drugs was effective in the recovery of animals affected by *Demodex canis*, not showing recurrence.

**Keywords:** Dermatitis, Ectoparasites, Medicines, Homeopathy, Dog

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## 1. Introduction

The skin is the most extensive organ of the body and fulfills many functions among which are the protection of the environment, the regulation of temperature, and sensory perception. The skin has a bacterial flora that is made up of saprophytic microorganisms whose population remains latent and in permanent mutualism [1]. In normal skin there are certain defense mechanisms and barriers: hair mantle, stratum corneum, plus sebaceous crust that forms on the surface of the stratum corneum, product of secretions and scaling, linoleic acid, and immunity elements [5]. When these natural barriers are overcome we are in the presence of dermatological diseases.

Demodicosis has been reported in canines [10, 27], it is a parasitic disease, the result of the existence on the skin of a large number of mites belonging to the genus *Demodex*. The *Demodex canis* is responsible for the majority of injuries in the dog. The mites are habitual residents of the

hair follicles, although they have also been found in the sebaceous and apocrine adjacent glands [21].

Dogs that had a skin lesion were probably due to stressors that favor a state of immunosuppression [20, 24].

Hahnemann wrote and talked about the use of homeopathy in animals [23].

Homeopathic remedies in many countries are used as an effective, economical and free of important side effects therapy as reported by [3-4, 12-13, 30].

Therefore, the present work is proposed to evaluate the effect of Sulfur at 30 CH combined with allopathic treatment in canine demodicosis.

## 2. Materials and Methods

The investigation was carried out, with dogs that received treatment for skin diseases, belonging to the municipality of Camagüey, Cuba. An open, non-sequential, randomized phase II clinical trial was conducted from a sample of 60 canines of both sexes, of the breeds: Pit Bull,

Shar Pei, German Shepherd; Dalmatian and Mestizo, aged between two months and two years; classified as sick animals due to demodicosis, during the 2013-2016 period.

The experimental population was carried out in two randomized groups, each group consisting of 30 canines; informing the owners who agreed to stay in group 1 or group 2.

#### Group I

Formed by 30 animals that received allopathic treatment: 1% Ivermectin in doses of: 0.1 ml / 5 kg twice a week, for four weeks; antimicrobial (Gentamicin) 6-10 mg / kg every 24 hours for 10 days; Yatren 0.5-5 mL according to size, every seven days for a month and the dogs were sprayed twice a week with Amitraz at the rate of 1 mL in a liter of water, for a month, applying heat with a hair dryer before atomize the dog.

#### Group II

Formed by 30 animals that received Sulfur at 30 CH, five sublingual drops every 12 hours, for a month, plus the allopathic treatment described for group I.

The animals were evaluated in asymptomatic, when they had no symptoms of the disease and were clinically well; improved, considering that they had recovered and many of the injuries were disappearing; recurrence in cases those who once recovered, contracted the disease again.

The complementary tests performed were: Skin scrapings to all the animals studied, microbiological examinations in the Provincial Laboratory of Veterinary Diagnosis, to confirm the diagnosis. The presumptive diagnosis was based on the symptoms and clinical signs of the disease.

The data were processed in the IBM SPSS Statistics 21.0 Statistical Program - August 2012, performing a Chi-square Analysis [19].

### 3. Results and Discussion

The dogs showed, to varying degrees, characteristic lesions of demodicosis: multifocal or diffuse alopecia / hair removal, erythema, desquamation, comedones, folliculitis, furunculosis. Pruritus was generally associated with the presence of secondary pyoderma, which occurred in 10 of the cases (6%). The diversity of clinical syndromes observed is considerable and the effects of the lesions vary from a simple itching to those that may endanger the life of the animal [9] cited by [18].

Canine demodicosis is induced by excessive proliferation of mites, in their immature (egg, larva and nymph) and adult phases, which induces skin inflammation in the animal. However, the Demodex mite is considered a normal inhabitant of the skin in dogs and, generally, does not induce disease in these, but in certain circumstances it becomes an opportunistic pathogen [7, 14, 25, 26].

Table 1 shows the evolution of the animals two months after the treatment was applied, showing in asymptomatic (Group I) 16 (26.7%); 4 (6.7%), improved and 10 (16.7%)

presented recurrence; while in (Group II), 30 (50%) were asymptomatic.

**Table 1.** Evolution of the animals two months after the treatment was applied.

		Group I	Group II	Total
Asymptomatic	Count	16	30	46
	% of the total	26.7%	50.0%	76.7%
Improved	Count	4	0	4
	% of the total	6.7%	0.0%	6.7%
Recurrence	Count	10	0	10
	% of the total	16.7%	0.0%	16.7%
Total	Count	30	30	60
	% of the total	50.0%	50.0%	100.0%

Several authors suggest that a genetically preprogrammed immune defect is responsible for the excessive proliferation of mites in demodicosis; However, this hypothesis does not match the clinical experience and the various reports of scientific publications, which indicate that in the majority of dogs treated appropriately there was no relapse to the disease. [6].

Homeopathic remedies act on vital energy, facilitating the immune response; When the animal acts on energy stimuli that have similar characteristics to their vital energy, these stimuli are capable of provoking the reaction of their vital energy, because it has been stimulated, it tends to produce a modification in the field, either as a dynamic disorder, that manifests itself through a symptomatology that will be especially particular, or there will be the correction of a dynamic alteration that has been in that field, with the consequent disappearance of a series of symptoms that were present [2].

Table 2 shows a significant difference between treatments, Group II being more effective, as it does not present a recurrence.

**Table 2.** Chi-square test.

	Value	gl	Sig. asymptotic (bilateral)
Pearson's Chi-square	18.261 <sup>a</sup>	2	.000
Likelihood ratio	23.737	2	.000
Linear association by linear	15.211	1	.000
Number of valid cases	60		

Table 3 shows the recovery of dogs by breed, in our study it was observed that the most predisposing were: Pit Bull, German Shepherd and Dalmatian. We consider it due to the genetic predisposition that has developed between them, due to the high consanguinity existing in the municipality of Camagüey, because the breeders do not have any crossing strategy (they do not belong to the Cynological Federation of Cuba), backcrosses are performed, for not paternity control. The genetic predisposition to this disease is referred by many authors [22, 24, 28]. The genetic component was not demonstrated in our case, but we infer that it is related to racial predisposition.

**Table 3.** Evolution of animals according to breed.

		Pit Bull	Shar Pei	Pastor Alemán	Dálmata	Mestizo	Total
Improved	Count	2	1	0	1	0	4
	% of the total	3.3%	1.7%	0.0%	1.7%	0.0%	6.7%
Asymptomatic per month	Count	12	9	14	11	10	56
	% of the total	20.0%	15.0%	23.3%	18.3%	16.7%	93.3%
Total	Count	14	10	14	12	10	60
	% of the total	23.3%	16.7%	23.3%	20.0%	16.7%	100.0%

Different studies have shown that demodicosis is related to an inherited immune disorder [8] cited by Ortúñez [17].

Ortúñez [17] refers to prolonged use of immunosuppressive products (corticosteroids, progestogens) and concurrent diseases as predisposing factors in demodicosis.

## 4. Conclusion

It was shown that the use of homeopathic remedies Sulfur at 30 CH, combined with allopathic drugs was effective in the recovery of animals affected by *Demodex canis*, not showing recurrence.

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