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**INDO AMERICAN JOURNAL OF  
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.1318607>Available online at: <http://www.iajps.com>**Research Article****ACARICIDE ACTIVITY OF "ABIFIPR" MEDICINE AT DOG  
DEMODICOSIS**

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**Abstract:**

*Demodicosis of dogs is one of the extended, difficult responding to treatment skin diseases and the causing significant economic damage, to both breeding dog breeding, and all types of film logical activity in general (the efficiency of dogs, big financial costs of treatment of sick animals decreases, breeding producers after a disease are discarded from cultivation). Demodicosis is caused by an immunodeficiency and clinical display of a disease as result of immunosuppression or genetic predisposition. The purpose of work was studying of acaricide efficiency of the medicine "Abifipr" pour-on at a demodicosis of dogs. It is established that " Abifipr" pour-on at local drawing on affected areas in a dose of 0,03 ml, twice with an interval of 5 days, has the expressed 100% therapeutic efficiency.*

**Keywords:** *ticks, dogs, demodicosis, Demodex canis, abifipr (pour-on), medicines, insectoacaricides, acaricide efficiency*

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## INTRODUCTION:

Demodicosis of dogs is the parasitosis of carnivores, which is one of the most common diseases, which is difficult to treat and which causes significant economic damage to official dog breeding (Bissonnette S, et al., 2009; Domatsky V.N., 2014; Stolbova O.A. et al., 2014). The duration of this invasion treatment causes a lot of trouble for pet owners. In the cities of Russian Federation and beyond, the incidence of dogs with cutaneous pathologies occupies a leading place and the diagnosis for demodicosis is set in 34.3-67.4% of cases (Stolbova O.A. et al 2018).

Systematically, Demodex tick belongs to the Arthropoda type, the Chelicerata subtype, the Arachnoidea class, the Acariformes order, the thrombidiformes suborder, the Demodecidae family, the Demodex genus and the Demodex saenis type.

Skin diseases are diverse and demodicosis is a severe dermatosis, mostly among young dogs, as it often takes a general character and often takes place associatively with the attachment of pathogenic microflora. The treatment of invasion is prolonged one, from 2 to 12 months, with often observed relapses, and, therefore, an expensive one. It is known that producers transfer the predisposition to demodicosis among their offspring by inheritance, giving an infected offspring, which does not participate in reproduction later (Mueller, R.S., et al., 2011; Izdebska, Joanna N .; Fryderyk, Slawomira, 2011).

In order to fight and protect against parasitosis of dogs one can use a variety of acaricidal compounds. Currently, for this purpose, they use the drugs based on synthetic pyrethroids, macrocyclic lactones, isoxalins, phenylpyrazoles, etc. (Lovell R.A., 1990; Arisov M.V., Kurochkin K.G., 2007; Stolbova O. et. al., 2014). Acaricides are used, both by spraying animals with aqueous emulsions, the wearing of acaricidal collars, and by its local application to separate body parts, as well as by taking it inside. The multiplicity of animal treatments with antifungal drugs lasts from several days to a month. The result of such treatment use is the protection of animals against external pathogens (KokozYu.M. et al, 1999; Mealey KL et al., 2001; Roulet A. et al., 2003; Arisov, M.V., 2010).

Demodicosis invasion remains an actual problem in cynology. During the study of demodexic invasion, the complexity of therapeutic measures and the need for the use of etiological and symptomatic therapy are established. The development of resistance among ticks to frequently used insectacaricides requires the carrying out of research and the implementation of

new or improved veterinary medicinal products used for medical measures.

## STUDY PURPOSE:

The purpose of our study was to study the acaricidal activity of "Abiphir" pour-on during dog demodicosis.

## MATERIALS AND METHODS OF RESEARCH

Experimental work was carried out during the period of 2012-2017 in the laboratory of acarology at All-Russian Scientific Research Institute of Veterinary Entomology and Arachnology, the branch of the Tyumen Scientific Center of SO RAS, at the Department of Non-contagious diseases among agricultural animals at FSBU HE "State Agrarian University of the Northern Trans-Urals", as well as in veterinary clinics of the Tyumen region.

"Abiphir" is an insectoacaricidal drug containing 0.5% of fipronil and 0.1% of abamectin. It is applied by the pour-on method (VNIIVEA - the branch of the Tyumen Scientific Center of SO RAS) (Stolbova O.A., Leshchyov M.V., 2016).

In order to carry out the test 50 dogs were selected with confirmed demodicosis diagnosis, of which 4 experimental groups were formed, 10 heads in each group and 1 control group was formed. The diagnosis of demodicosis was made taking into account the anamnestic data, the clinical signs and the results of microscopic examination of demodectic colony contents and deep skin scrapes (Fig. 1).



Figure 1- The tick Demodex canis

In order to treat the dogs with demodicosis, the "abiphir" pour-on composition was applied by local application to the affected parts of an animal body at the doses of 0.005 ml/kg - 1st group, 0.01 ml/kg - 2nd group, 0.03 ml/kg - 3rd group and 0.05 ml/kg - 4th group per animal, twice with an interval of 5 days. The animals in the control group were treated with distilled water. The drug effectiveness was analyzed.

**RESULTS OF RESEARCH AND DISCUSSION:**

The therapeutic efficacy of the acaricidal drug was taken into account 5 days after the first treatment and 5, 10, 15, 30 days after the second treatment by the

clinical examination of animals and the microscopic examination of skin scrapes from the affected parts of cattle body. The results of the studies are presented in Table 1.

Table 1 - Therapeutic efficacy of "abiphpr" (pour-on) to treat dog demodicosis

Groups of animals	Dose, ml/kg	Invasion intensity			
		Prior to treatment		Recovered animals	
		Number of animals	%	Number of animals	%
1-st test group	0,005	15	100	6	30,0
2-nd test group	0,01	15	100	10	60,0
3-rd test group	0,03	15	100	15	100
4-th test group	0,05	15	100	15	100
Control, water	0,05	10	100	10	0

During the clinical and laboratory studies of skin scrapings demodex mites were not revealed in a darkened field of vision. The monitoring of hematological parameters among dogs did not reveal any deviations, there were no drug side effects from the gastrointestinal tract and the nervous system, a rather rapid regression of the lesion sites was noted.

On the basis of the results, it was found that after a double treatment with the drug "abiphpr" (pour-on) the experimental animals showed the decrease of demodicosis damage at the end of the experiment, the decrease of colonies, and young colonies were not detected. During the detection of a few old colonies and the removal of crusts from them, epithelized skin areas were found. Demodex canis ticks (alive) were not found with an obligatory microscopic examination of scrapings. The scrapes taken from the animals of the control group demonstrated ticks throughout the entire experiment at various stages of development.

Thus, with the use of the acaricidal drug abiphpr (pour-on) to treat dog demodicosis, the therapeutic efficacy of the drug in the first and the second group was 26.6% and 66.6%, respectively, and in the third and the fourth group it made 100%.

**CONCLUSION:**

Analyzing the obtained results, it can be concluded that "abiphpr" pour-on at dog demodicosis has 100% therapeutic efficacy by its application on the skin-hair cover along the spinal column at the dose of 0.03 ml/kg, twice with an interval of 5 days. It can reduce the duration and the laboriousness of the treatment process and can be recommended for veterinary practice.

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