

## THE ISSUE OF THERAPY POSTPARTUM ENDOMETRITIS IN SOWS USING ENVIRONMENTALLY FRIENDLY REMEDIES

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### ARTICLE INFO

#### Received:

03<sup>th</sup> October 2018

#### Received in revised form:

02<sup>th</sup> Apr 2019

#### Accepted:

06<sup>th</sup> Apr 2019

#### Available online:

28<sup>th</sup> Apr 2019

### ABSTRACT

Nowadays there is a wide range of various methods and means for treatment and prevention of postpartum pathologies. Although antibiotics, sulfonamides, chemotherapeutic agents, and antibacterial drugs are still the most commonly used in veterinary, all of them have more or fewer drawbacks and contribute to an increase in antibiotic resistance of microorganisms. The purpose of the experiment was to study the effectiveness of new, economical, environmentally friendly, and easy to use drugs for the treatment of postpartum endometritis in sows. The results of the experiment showed that the usage of environmentally safe remedies for the treatment of postpartum endometritis in sows increased the safety of pigs by 20%. The therapy durations were 4.44±0.358 and 4.22±0.386 days in the first and second experimental groups, respectively.

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**Keywords:** *Postpartum endometritis in sows, therapy, chelated I (chelated iodine), plant extracts, tissue preparation, ecologically safe remedies.*

**To Cite This Article:** Galina Vladimirovna Osipchuk, Sergey Nikolaevich Povetkin, Andrey Ashotovich Nagdalian, Igor Alekseevich Rodin, Matvey Igorevich Rodin, Irina Vladimirovna Ziruk and et al. (2019), "The Issue of Therapy Postpartum Endometritis in Sows Using Environmentally Friendly Remedies", *Pharmacophore*, **10(2)**, 82-84.

### Introduction

Pig-breeding is quite an intensive and early-maturing in the animal industry. Like in any other branch of agriculture, here there are various problems, too. One of them is the diseases of sows in the postpartum period: MMA, mastitis,agalactia, genital trauma, postpartum endometritis, etc. [1].

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Any of these diseases cause significant economic damage including lack of accession to the offspring, diarrhea, mortality of the piglets, lengthening the inter-breeding period, and additional costs for drugs and veterinary services.

Nowadays there is a wide range of various methods and means for the treatment and prevention of postpartum pathologies. Although antibiotics, sulfonamides, chemotherapeutic agents, and antibacterial drugs are still the most commonly used in veterinary, all of them have more or fewer drawbacks and contribute to an increase in antibiotic resistance of microorganisms [2, 3].

In this regard, veterinary specialists seek a way to limit the use of antibiotics. Sometimes antibiotics are replaced with more environmentally friendly drugs containing various microelements or plant extracts. The drugs including Pivs, Percutan, Iodopen, Monclavit, etc are quite effective due to the microelements containing in them or herbal extracts have antibacterial, bactericidal, and sometimes fungicidal or antiviral properties [4-7]. In spite of their availability, one should take into account the constantly changing market demand, competitiveness, and cost of the drugs [1, 8-10]. Therefore, the search and elaboration of new cheaper simple applications of environmentally friendly means are still needed.

The goal of this study was to evaluate the effectiveness of new, economical, environmentally friendly, and easy to use drugs for the treatment of postpartum endometritis in sows.

The specificity and innovation of these means lie in the fact that they can be produced from cheap and environmentally friendly components in self-sustainable pig-farms.

## Materials and Methods

The study was carried out in conditions of pig-breeding and hybridization of pigs «Moldsuinhibrid», in Orgeev, Republic Moldova. Newly farrowed sows with a diagnosis of postpartum endometritis were selected for the study and divided into 3 groups: one control and 2 experimental groups.

In the control group, all sows were treated according to the scheme adopted in the pig farm. For treatment, 1 ml/20 kg body weight of “Enrofloxacin50” was used intramuscularly once a day for 3-6 days.

The animals of both experimental groups were injected with 1 ml/100kg body weight of the drug, once (into the upper part of the neck, behind the ear) with a tissue preparation. Before the use, the drug was diluted with a 0.5% solution of Novocain in a 1:1 ratio.

At the same time, the sows in the first experimental group were intrauterinely induced by 50-150 ml of the preparation, containing chelated iodine and the extract of the medicinal plant D (preparation D).

The sows in the second experimental group were induced intrauterinely by 50-150 ml of the preparation containing chelated iodine and the extract of the medicinal plant C (preparation C).

The inducing frequency of the preparations D and C was administered by an intrauterine device once a day for 3-5 days.

The treatment was carried out until all clinical signs of postpartum endometritis disappeared.

All animals were kept in the same condition and with the same diet.

Before and after starting the therapy, the blood samples were taken from all animals.

The tissue preparation was made in the laboratory of a scientific institute.

All of the preparations were made directly in the conditions of the pig-farm «Moldsuinhibrid».

These three tools (tissue preparation, preparation D, and preparation C) are in the process of patenting.

## Results and Discussion

The data obtained during the experiment are presented in Table 1.

**Table 1.** Experimental data

Groups	n	Treatment (scheme)	Duration of therapy (day)	Safety (%)
Experimental group 1	7	tissue preparation with 1ml/100kg body weight intrauterinely induced by 50-150 ml of the preparation containing chelated iodine and the extract of the medicinal plant D, once a day for 3-5 days	4,44±0,358	89,2
Experimental group	5	tissue preparation with 1ml/100kg body weight intrauterinely induced by 50-150 ml of the preparation containing chelated iodine and the extract of the medicinal plant C, once a day for 3-5 days	4,22±0,386	90,0
Control group	7	1ml/20kg body weight of “Enrofloxacin50”, once a day, intramuscularly, for 3-6 days.	5,83±0,350	83,33

Studies showed that the duration of treatment in the experimental groups was less than in the control group. In the first experimental group, the therapy duration was 4.44±0.358 days, which was 1.39 days (23.84219%) less than in the control group.

In the second experimental group, the duration of therapy was 4.22±0.386 days, which was 1.61 days (27.615%) less than in the control group.

The survival of piglets in the first experimental groups was 5.9% more than in the control group. In the second experimental group, the safety of the piglets was 6.67% higher than in the control group.

The data obtained from the study of blood samples taken from animals of all groups showed that all therapy methods did not have a negative impact on the animals.

This confirms the safety and effectiveness of new, environmentally friendly preparations. Also, the obtained data showed that these drugs are more effective than antibiotics.

It can be stated that "Enrofloxacin50" is also excreted with milk of lactating animals. Therefore, it enters into the body of piglets and can prevent the development of diarrhea and the death of offspring. However, it was in the control group, not the experimental groups.

It has also been known that in postpartum pathologies the normal functioning of the mammary gland leads to disorder, the production of lysozyme M (a natural bacteriostatic in milk) decreases the number of somatic cells, and pathogenic microflora increases. Such milk leads to an impaired formation of colostrum immunity in piglets. Since in all groups, all sows had postpartum endometritis, colostrum immunity was impaired in piglets of all groups. But, in repeat, only the control group had a lower safety in the piglets, probably due to the antibiotic that caused their mortality. So, the study needs to be continued.

## Conclusion

New, environmentally friendly products can be recommended to use. It was stated that in the treatment of postpartum endometritis sows, applying new environmentally friendly means:

1. the duration of therapy decreased by 23,8 % and 27,6% in the first and second experimental groups, respectively.
2. the safety of piglets increased by 5,9% and 6,67% in the first and second experimental groups, respectively.

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