STATE UNIVERSITY OF MOLDOVA
INSTITUTE OF PHYSIOLOGY AND SANOCREATOLOGY

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OSIPCIUC GALINA

REPRODUCTIVE POTENTIAL OF PIGS IN DEPENDENCE FROM THE PHYSIOLOGICAL STATE OF THE BODY

165.01 – HUMAN AND ANIMAL PHYSIOLOGY

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The work was carried out in the Department of Fundamental and Clinical Sciences, Laboratory of Physiology and Reproductive Health, Laboratory of Biotechnologies of Reproduction and Embryo Transplantation.

Scientific Supervisor:
BALAN Ion, Doctor Habilitated of Biological Sciences, Associate Professor,
165.01 - Human and animal Physiology

Scientific Adviser:
MAȘNER Oleg, Doctor of Agricultural Sciences, Associate Professor,
421.03 – Technology of animal rearing and production of animal breeding products

Official referent:
CRIVOI Aurelia – Doctor Habilitated of Biological Sciences, Professor, State University of Moldova;
POPOVICI Mihail - Doctor of Veterinary Medicine, Associate Professor; Technical University of Moldova.

Members of the Specialized Scientific Council:
STARCIUC Nicolae, Doctor Habilitated of Veterinary Medicine, Professor, President;
POLEACOVA Lilia - Doctor of Biological Sciences, Scientific Secretary;
FURDUI Teodor - Doctor Habilitated of Biological Sciences, Professor, Academician;
CIOCHINĂ Valentina - Doctor of Biological Sciences, Associate Professor;
DONICA Iov - Doctor of Agricultural Sciences, Associate Professor.

The thesis defense will be held at 28 July 2023 time 14.00 at the meeting of the Specialized Scientific Council at the Institute of Physiology and Sanocreatology at the address: Akademii str., 1, Chisinau, hall 352.

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Scientific Secretary of the Specialized Scientific Council:
POLEACOVA Lilia,
Doctor of Biological Sciences _____

Scientific Supervisor:
BALAN Ion,
Doctor Habilitated of Biological Sciences, Associate Professor _____

Scientific Adviser:
MAȘNER Oleg,
Doctor of Agricultural Sciences, Associate Professor _____

Author:
OSIPCIUC Galina _____

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GENERAL CHARACTERISTICS OF THE WORK

The relevance of the topic. In connection with the increasing population on the planet is a growing demand for food (especially food containing animal protein). According to the recommendations of FAO/who and the physiological norms of consumption of meat and meat products should be no less than 85 kg per year [23, 15]. Currently, depending on the level of per capita income, an adult in the year is from 51.6 to 106,0 kg of meat and meat products. Data comparing the level of protein consumption by decile groups shows that a significant part of the population in the diet there is a shortage of animal protein.

In this regard, the main task of animal husbandry is to intensify the reproduction of the herd and maximize the productivity of animals.

A promising branch of animal husbandry in this regard is pig breeding, since pigs are precocious animals with a large average daily increase in muscle mass.

To maximize productivity and prevent the occurrence of dysfunctions in the conditions of modern technologies for keeping pigs, various means, methods and biostimulants are systematically used: vitamins, bacterial and pharmaceutical preparations, protein-mineral-vitamin complexes (BMVC), nonsteroidal anti-inflammatory drugs (NSAIDs), antibiotics, etc. [13, 24, 16]. This often leads to metabolic disorders, an increase in antibiotic resistance, the appearance of pathologies caused by secondary and opportunistic microflora, an increase in the level of diseases of the reproductive organs (including postpartum endometritis and subclinical mastitis), which ultimately significantly reduces the reproductive potential of sows [3, 5, 26, 27].

Description of the situation in the field of research and designation of tasks.

Intensification of reproduction in pig breeding taking into account the reproductive potential of pigs and the physiological status of their organism on the basis of timely therapy and prevention of diseases of the reproductive organs is the key to a steady increase in production [4]. Over the past 20 years, the number of products received in pig farming has increased. Currently, in the Republic of Moldova, pork already occupies up to 35-50% of the total meat preparations [16], while the productivity of sows is still 40-60% of their potential. This is often due to the fact that modern maintenance technologies include the mandatory use of various drugs, antibiotics, vitamins, trace elements and growth stimulants. This can provoke a decrease in the body's resistance and an increase in the number of dysfunctions in the reproductive organs (in particular, subclinical mastitis and endometritis) and the consequences associated with dysfunctions: diseases and the death of suckling piglets during the suckling period; a decrease in the quality and volume of products received in the future; forced use of large doses of antibiotics, etc. drugs, which ultimately significantly reduces the reproductive potential of sows [3, 24, 26, 25, 27].

Therefore, in order to preserve the reproductive potential of pigs, timely diagnosis, therapy and prevention of postpartum pathologies are also necessary, rational use of growth stimulants, including various biologically active substances.

Knowing the properties of such biological compounds and using them correctly, it is possible to maximize, due to the activation of metabolism, increase the conversion of feed, increase the safety of piglets and the reproductive potential of sows [18, 6, 20]. The above encourages us to further study the prospects and effectiveness of the use of new biological

products, means and methods for improving the reproductive potential of sows in the Republic of Moldova.

Research hypothesis: increased reproductive potential of pigs by stimulating metabolism, enhance the immune system and prevent violations of the physiological processes of the reproductive organs. The hypothesis is based on the fact that the biostimulants have a stimulating effect on the entire body, due to which are activated metabolism, regenerative properties of tissues, reduced the time of therapy in various pathologies, increases the reproductive potential of animals that gives the chance to receive additional products under certain pathophysiological conditions of the body (subclinical mastitis and endometritis).

The purpose of the research: to study the effect on the reproductive potential of sows and the development of piglets of new drugs developed and used for the diagnosis, therapy and prevention of subclinical (latent) mastitis and postpartum endometritis to increase the reproductive abilities of sows.

Research objectives.

1. To establish the degree of morbidity of sows with subclinical mastitis and postpartum endometritis in a specialized farm.

2. To develop a simple, effective, safe and cheap way to diagnose subclinical mastitis in sows with Progress 20M.

3. To find out the effectiveness of therapeutic and preventive measures of subclinical mastitis and postpartum endometritis with the use of biological compounds: PIRS (polymer-iodine-bismuth-sulfonamide), tissue preparation and intrauterine administration (contain extracts of medicinal plants and iodine with amylodextrin).

4. To determine the reproductive indicators of sows when using new means of therapy and prevention of subclinical mastitis and postpartum endometritis.

The synthesis of the research methodology and the justification of the selected research methods are selected taking into account the application and introduction of several new tools and scientific research simultaneously in production conditions.

The objects of the study were: 1,476 sows, 2,070 piglets, rabbits and white mice 120 blood samples, 90 milk samples, 56 flushes from the genitals of sows, a substance containing surfactants (Progress 20M), a tissue preparation, a preparation of PIVS, preparations from extracts of medicinal plants of the family *Asteraceae/Lamiaceae* and iodine with amylodextrin.

In accordance with the purpose and objectives, classical and modern research methods were used to confirm the hypothesis of the study:

- microbiological studies to get ahead of the species composition of microflora (cultivation, determination, isolation and identification of microorganisms in milk and flushes from the genitals, antibiotic resistance);
- determination of acute toxicity, irritant effect and biological activity of a tissue preparation;
- biochemical studies of blood samples of sows and piglets;
- morphological studies of blood samples of sows and piglets;
- statistical research and evaluation of economic efficiency.

Scientific novelty. The prevalence of latent mastitis and postpartum endometritis was studied for the first time in the conditions of the „Moldsuinhibrid" enterprise of the Republic of Moldova. For the first time in the Republic of Moldova, it was developed and applied:

1) a method for diagnosing subclinical mastitis using Progress 20M liquid;

2) in the conditions of the pig breeding and hybridization enterprise „Moldsuinhibrid", a complex of therapeutic and preventive measures was created and tested using biological agents from animal and plant tissues and means for intrauterine administration (contain extracts of medicinal plants and a compound of iodine with high polymers);

3) the influence of new biologically active compounds on the productivity of sows in production conditions has been studied;

4) in the conditions of industrial pig breeding of the enterprise, the relationship between subclinical mastitis, endometritis, safety and weight gain of piglets has been studied.

The result obtained, contributing to the solution of an important scientific problem: It consists in the creation and application in production conditions of easy-to-manufacture and inexpensive, affordable means for the diagnosis, therapy and prevention of latent mastitis and postpartum endometritis, which helps to reduce the incidence and improve the reproductive potential of pigs under certain physiological conditions.

Theoretical significance: it consists in the development of simple physiological methods to improve pig reproduction in production conditions, implemented taking into account the optimal intervals of insemination, therapy and prevention of subclinical mastitis and postpartum endometritis, which is associated with the safety and weight gain of piglets.

Practical significance. New, simple, cheap, economical means for the diagnosis, therapy and prevention of postpartum diseases have been tested in production conditions and their effectiveness has been proven.

The proposed means and method of diagnosis of subclinical mastitis have such qualities as: efficiency, accessibility, cost-effectiveness.

The proposed diagnostic method does not violate the physiological processes of milk production in a sow and allows timely detection of dysfunction.

The results of the conducted studies became the theoretical basis for improving the measures for the diagnosis, prevention and treatment of animals in certain physiological (pathophysiological) conditions and were included in the methodological recommendations for the therapy of diagnosis and prevention of subclinical mastitis of sows.

The proposed means activate the hidden biological reserves of the body, increase the reproductive potential of the sow, provide an increase in the effectiveness of prevention and treatment of sows in postpartum specific physiological conditions after farrowing (taking into account their physiological characteristics), contribute to reducing the incidence rate and increasing the safety of piglets.

The main provisions submitted for protection:

1. The incidence of sows with subclinical mastitis and postpartum endometritis in the conditions of modern pig breeding experimental farms.

2. Means and methods of increasing the effectiveness of the method of diagnosing subclinical mastitis in sows by means of Progress 20M.

3. Means and methods to improve the effectiveness of therapeutic and preventive measures against subclinical mastitis and postpartum endometritis using biological compounds: PIRS (polymer-iodine-bismuth-sulfonamide), tissue preparation and intrauterine administration (contain extracts of medicinal plants and iodine compound with amylodextrin).

4. The reproductive potential of sows when using new means of therapy and prevention of certain specific physiological conditions after farrowing.

Approbation of the work. Research materials were reported and discussed at: a meeting of the Department of Obstetrics and Surgery and the Faculty of Vet. Med. GAU RM in 2005-2008; meeting of the Laboratory of Physiology and Reproductive Health, Institute of Physiology and Sanocreatology RM in 2019-2021; International Symposium (hereinafter MS) Chisinau, 2008, RM; International Scientific and Practical Conference (hereinafter MNPC) Voronezh, 2009, RF; MNPC SKNIIZH Krasnodar, village. Znamensky in 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2017 years . Russian Federation; MS „35 years of Higher Veterinary Education of the Republic of Moldova" Chisinau, 2009, RM; MS S.Maksimovka, 2011, RM; NPK Stavropol, 2017, RF; MNPC, FGBNU KNTSZV Krasnodar, 2019, RF; RF Patent No. 2450268 dated 10.05.2012 „Method of diagnosis of subclinical mastitis in sows"; „Method of diagnosis of subclinical mastitis in sows" winner of the jury prize at the exhibition November 12-15, Ungheni-Romania-Moldova 2017; in 2017 for 3-at the opening of the International Salon of Inventions and Innovations „Traian Viua" in Timisoara, Romania on June 7-9, „Banats University of Agricultural Sciences and Veterinary Medicine King Michael 1 of Romania" received a diploma of EXCELLENCE and a gold medal; at the exhibition on November 12-15, Ungheni-Romania-Moldova - Diploma with honors and an INVENT medal -INVEST-2017; gold medal was received at INFOINVENT on November 15-18, 2017; „Life sciences in the dialogue of generations: connections between universities, academia and business community", National Conference with International Participation, Chisinau, 2019; CSN with international participation Chisinau, 2019; CSN with international participation Chisinau, 2020; CSN with international participation Chisinau, 2020; National Scientific Symposium Chisinau, 2021; scientific-practical conference with international participation „Innovations in Animal Husbandry and Animal Product Safety – achievements and perspectives". Maximovca, 2021.

Personal contribution of the applicant. Experimental and theoretical research on the topic of the dissertation was conducted personally by the applicant.

Publications. The main research materials are presented in 42 publications.

The volume and structure of the dissertation. The dissertation is presented on 152 computer-generated pages (196 pages), contains 44 tables, 5 figures and 8 photographs. It consists of an introduction, a literature review, a description of research materials and methods, own research, discussion of results, conclusions, practical proposals, a list of references (includes 244 sources) and appendices.

CONTENT OF THE THESIS

In the introduction to the work, the timeliness, importance and necessity of the research carried out are argued, the scientific novelty of the results obtained is described, the current situation in this field is reflected, the purpose and objectives of the research, the research

hypothesis, the synthesis of research methodology and the justification of research methods are formulated.

1. LITERATURE REVIEW

Contains 6 parts in which:

- the physiological and biological features of the pig organism, productivity parameters and reproductive potential of sows are described.

- the factors contributing to a decrease in the reproductive qualities of sows are described: the reasons for reducing the use of sows and low fertility; the relationship between the duration of farrowing, the viability of the offspring and reproduction of the uterus; the relationship between the offspring waste, the weight of the piglet at birth, the presence of hypo/agalactia and obstetric-gynecological pathologies in sows.

- data on the magnitude of economic damage due to a decrease in the reproductive potential of sows due to postpartum pathologies and the means and methods used for the diagnosis, therapy and prevention of endometritis and latent mastitis are presented.

- data on the negative effects of antibiotics and the positive effects of biostimulants on the reproductive potential of animals are presented.

- modern theories and mechanisms of the effect of preparations from animal/plant tissues and iodine-containing preparations on the physiological status of the animal organism and the effect of these agents on reproductive potential are described.

2. MATERIALS AND METHODS OF RESEARCH

Research material: 1476 sows, 2070 piglets, rabbits, white mice, 120 blood samples, 90 milk samples and 56 flushes from the genitals of sows, tissue preparation, PIVS, Progress 20M, preparations from the extract of plants of the *Asteraceae/Lamiaceae* families and chelated iodine compounds.

Research methods. Clinically healthy sows and sows were selected, in which only latent mastitis or postpartum endometritis was detected. Piglets were weighed, cases of death and diarrhea were noted. The morphological and biochemical composition of blood was studied [1, 9].

Hematological and biochemical studies of blood samples determined: the number of erythrocytes and leukocytes, hemoglobin level, erythrocyte sedimentation rate (ESR), leukogram [11, 19], total protein, albumin, protein fractions, alkaline phosphatase activity; glucose, creatinine, triglycerides, urea, iron - Fe, calcium - Ca, phosphorus - P, magnesium - Mg, amylase, alanine aminotransferase (ALT or AlAT) and aspartate aminotransferase (AST or AsAT), cholesterol, [7, 8, 10].

According to GOST 31926-2013 and the generally accepted methodology of D.F.Osidze [17], the biological activity of Tesnormin-V and the toxicity of the drug Tesnormin-V were determined on white mice weighing 18-20 g, the irritating effect of Tesnormin-V was determined by conjunctival tests on rabbits.

To determine the microflora in milk with latent mastitis, milk samples were taken after farrowing, and with postpartum endometritis, flushes from the genitals were taken.

Sowing was carried out on meat-peptone broth (MPB), meat-peptone agar (MPA), blood agar, MPA with 1% glucose, Endo medium, Saburo, candida agar, wort-agar, etc. The species belonging of the microflora was established according to the recommendations of V.M. Kartashova and the „Berga Bacteria Determinant" [21]. The pathogenicity of microorganisms was studied by intraperitoneal infection of white mice with a suspension of flushing of a daily agar culture in doses of 0.2-0.5 ml (200-500 million microbial cells) [12]. Antibiotic resistance was determined on Givental's nutrient medium–Witchy (AGV medium) by applying discs with antibiotics. The diameter of the growth retardation zone was estimated [1, 12, 14].

Milk samples were examined to determine the effectiveness of the method of diagnosing subclinical mastitis in sows and to identify sows with latent mastitis. Mastidine, liquid detergent Progress 20M and a sedimentation test were used to set up the reaction on a slide. The consistency, the presence of flakes, grains were taken into account. Comparing the results, a more accurate method of diagnosing latent mastitis was determined.

For the treatment and prevention of subclinical mastitis used: Oxytetravit, Bicillin-5, the iodine-containing drug PIVS, a tissue preparation (Tesnormin V) was diluted 1:1 with 0.5% novocaine solution before administration) and Enroflox5 for the treatment of piglets.

To determine the effectiveness of various methods of therapy for latent mastitis in group 1 of sows, Oxytetravit was injected 1 ml/10 kg of body weight once every three days. In the 2nd group - beer (on the udder skin 2 times a day for 3 days). In the 3rd group - PIVS (on the udder skin 2 times a day for 3 days) and a tissue preparation (Tesnormin-V) was injected once for 1 ml/150 kg of body weight. The control group consisted of clinically healthy sows. Enroflox of 5 ml/100 kg was used for the treatment of piglets in all groups.

To determine the effect of PIVS and tissue preparation (Tesnormin-V) on reproductive performance in sows, to calculate losses due to the death of piglets and the effect on the safety and morbidity of suckling piglets of PIVS and tissue preparation in the experimental group, PIVS and tissue preparation were rubbed into the skin of the mammary glands 2 times a day for 3 days and once, according to 1 ml/150 kg of body weight, Tesnormin-V was administered, clinically healthy animals were in control. For the treatment of piglets, Enroflox - 5 ml per 100 kg was used 1 time a day for 3 consecutive days.

The possibility of early prevention of latent mastitis was studied 40-45 days before farrowing by injections of tissue preparations Tesnormin-V and Choriocene. In group 1, 40-45 days before farrowing, Tesnormin-V was administered at a dose of 1 ml/150 kg. In the 2nd group, Choriocene was injected at 10 ml/animal 40-45 days before farrowing.

A study was conducted on the use of a tissue preparation 7-3 days before farrowing in order to determine the degree of preventive effectiveness depending on the time of administration before farrowing. In group 1, 40-45 days before farrowing, TesnorminV was administered at a dose of 1 ml/150 kg. In the 2nd group, TesnorminV was administered in the same dose 3-7 days before farrowing.

The level of morbidity, mortality and safety of suckling piglets were determined depending on the drug used for the prevention of latent mastitis. The uterus in group 1 was injected with TesnorminV 3-7 days before the survey, at a dose of 1 ml/75.0 kg. In the 2nd group, 3 to 7 days before the survey, Bicillin-5 was administered with 0.9% NaCl, 1500000UE.

The morbidity of latent mastitis was determined depending on the method and means of prevention. In the 1st group, for 3-7 days before farrowing, Bicillin-5 (1500000 UE) and TesnorminV were injected at 1 ml/150 kg. In the 2nd group, 7-3 days before farrowing, 1 ml/150 kg of Tesnormin was injected. In the 3rd group, 3 to 7 days before farrowing, Bicillin-5 was injected, 1500,000 units each. In the 4th group, 3-7 days before farrowing, a tissue preparation of 1 ml/150 kg of body weight was injected and, for 3 days, 2 times a day, milk bags were treated with the drug PIVS.

A drug or a complex of drugs was determined in which the minimum morbidity of latent mastitis would be combined with the minimum morbidity of suckling piglets and the maximum level of their safety: In group 1, Bicillin-5 (1500,000 UE) was injected 1 ml/150 kg of body weight in the 1st group 1-5 days before farrowing. In the 2nd group, 1 ml/150 kg of body mass was injected with a narrow norm. In group 3, Bicillin5 was injected before farrowing, 1500,000 UE. In group 4, before farrowing, a tissue preparation (Tesnormin-V) was administered at a dose of 1 ml/150 kg of body weight and milk bags were treated with beer 2 times a day for 3 days. Group 5 was a negative control.

The effectiveness of endometritis therapy when using: enrofloxacin 50; agents containing chelated I+ plant extracts and tesnormin (1:1 0.5% novocaine solution was diluted before administration) was determined on sows with postpartum endometritis and not patients with latent mastitis. In group 1, 50-150 ml of a drug containing iodine with amylodextrin and an extract from a plant of the *Lamiaceae* family were administered intrauterine once a day for 3-5 days. In group 2, 100-150 ml of a preparation containing chelated iodine and an extract from a plant of the *Asteraceae* family were administered intrauterine. Animals of the 1st and 2nd experimental groups were once injected with 1 ml/100 kg of body weight. In the control, enrofloxacin 50 was used for the therapy of metropathies, 1 ml/20 kg of body weight, once a day, intramuscularly 3-5, sometimes 7 days.

The effectiveness of the prevention of endometritis with: Enrofloxacin50, means containing iodine with amylodextrin+ plant extracts and tesnormin, was determined on the uterus of non-patients with latent mastitis. In group 1, 50-150 ml of a preparation containing iodine with amylodextrin and an extract of a plant of the *Lamiaceae* family were administered intrauterine once. In group 2, 50-150 ml of a preparation containing iodine with amylodextrin and an extract of a plant of the *Asteraceae* family were administered intrauterine. Immediately after farrowing, the uterus of the experimental groups was once injected with 1 ml/100 kg of Tesnormin-V in a 1:1 mixture with 0.5% novocaine solution. In the control, enrofloxacin 50, 1 ml / 20 kg of body weight was administered to the uterus once.

The effectiveness of therapeutic and preventive measures and reproductive potential were assessed by the morbidity of latent mastitis and endometritis, the duration of therapy, nest weight, uterine milk production; safety, morbidity and weight gain of piglets.

Economic efficiency was calculated according to the „Methodology for determining the economic efficiency of veterinary measures" [2].

The data obtained during the research were subjected to statistical analysis using indicators of descriptive statistics. The necessary calculations were performed using the Microsoft Office Excel 2010 user software package.

3. RESEARCH RESULTS

3.1. Morbidity of sows with subclinical mastitis and postpartum endometritis in the conditions of industrial technology of the supervised farm "Moldsuinhibrid" of the Republic of Moldova

787 farrowed sows were examined. 56,67% of had latent mastitis. In 2006, the morbidity was 58,77%, which is 2,1% more than the average. Compared with the last year of research (2008), the morbidity of subclinical mastitis decreased by 7,44%.

When determining the seasonality of the disease, it is clear that the morbidity of latent mastitis is seasonal and the main peak of the morbidity is in April – August. In these months, 70% to 72.7% of sows with subclinical mastitis were identified.

It was also found that in the autumn months the morbidity of animals decreases, from September to November this indicator decreases to 43,3%.

When considering the morbidity of sows with latent mastitis, there is a clear seasonal trend of an increase in the morbidity per quarter. A higher percentage of the number of patients with latent mastitis occurred in the 1st and 3rd quarters of the year – 62,1% and 58,1%, while in the 2nd and 4th quarters it decreased to 55,6% and 45,5%.

When studying the extent of the spread of postpartum endometritis, 689 farrowed sows were examined. The morbidity of postpartum endometritis was 20,32%, but, compared with the last year of research, it decreased by 0,46%. The morbidity of postpartum endometritis during the year ranges from 15.602% to 24,61%, and the average is 20,32%.

The peak morbidity of postpartum endometritis occurs in March – August: from 18,4% to 29,68%. In the autumn and winter months, the morbidity decreased to 11,76%.

The highest percentage of patients with postpartum endometritis occur in spring and summer – 22,63% and 24,76%, and in winter and autumn this indicator decreases to 15,43% and 15,71%.

3.2. Microflora of milk and genitals of sows with subclinical mastitis and postpartum endometritis

We conducted a study of 60 milk samples. 6 types of microorganisms were isolated. In animals with latent mastitis, microflora was isolated in associations in 22 sows (73.3%). The following bacterial associations were found: *Staphylococcus spp. + Escherichia coli* – 4 (18,2%), *Staph. spp + E. coli + Proteus vulgaris*,– 4 (18,2%), *E. coli + P. vulgaris* –5 (22,7%), *Streptococcus spp. + P. vulgaris*-3 (13,6%), *E. coli+St. spp + Str. spp* – 2 (9,1%), *St. spp +Str. spp + Citrobacter* – 1 (4,5%), *E. coli+Str. spp + Citrobacter* – 2 (9,1%), and other microbial associations – 1 (4,5%) cases.

In monoculture, microflora was isolated in 26,7%: *Staph. spp* in 1 (12,5%) sows, *E. coli* – 3 (37,5%), *Str. spp* – (25,0%), *P. vulgar*is – 2 (25,0%). 54,4% of cultures had hemolytic activity, 36,8% of cultures were pathogenic for laboratory animals.

In healthy animals in 18 (60.0%) cases, the following were found in monoculture: *Staph. spp* – in 2 (11,1%), *E. coli* – in 12 (66,7%), *P. vulgaris* - in 3 (16,7%). In associations, microorganisms were isolated from 12 (40%) sows: *Staph. spp + E. Coli* – in 2 (16,7%), *Str. spp + E. coli* – in 2 (16,7%), *E. coli + P. vulgari*s – in 7 (58,3%), other microbial associations – in 1 (8,3%) cases.

In 56 samples of flushes from the genitals were isolated (including in the association): *Staphylococcus spp*. in 37,5% of flushes, *Streptococcus spp*. in 17,85%, *Proteus vulgaris*. In 19,64%, *E.coli* in 53,57%, yeast-like and mold-like fungi (*Candida* and *Aspergillius*) in 14,28%, microflora was not identified in 19,64% (11 cases). Flushing of the genitals is quite contaminated.

3.2.1. Sensitivity of the isolated microflora to antibacterial agents, antibiotics

The antibiotics and antibacterial drugs to which the studied microflora is sensitive include levomycetin, gentamicin, enrofloxacin, PIVS, iodovet and amyloiodine. The growth retardation zone ranged from 17 to 33.2 mm. Low sensitivity or its absence was revealed to tetracycline, streptomycin, ampicillin, oxytetravit. The growth retardation zone ranged from 9,1 to 18,3 mm, in some cases there was no growth retardation zone (n/a). All bacteria were found to be sensitive to cefazolin, a growth retardation zone from 6,4 to 19,6 mm, and nitrofurans – furagin and furadonin. The growth retardation zone is from 11,1 to 19,1 mm.

Studies have shown that most strains of microbes are highly resistant to many antibiotics and chemotherapeutic agents.

3.3. Determination of the harmlessness of a tissue preparation

Acute toxicity of the tissue preparation was determined on white mice weighing 18-20 g. Mice of the 1st and 2nd groups of Tesnormin-V were injected subcutaneously at a dose of 0,3 and 0,5 ml per mouse. In group 3 mice, the drug was administered orally at a dose of 0,3 ml per mouse. The mice were observed for 14 days. There was no deterioration in the condition and death of the animals.

The irritating effect of the tissue preparation (TesnorminV) was determined by the method of conjunctival tests on rabbits, in which 1 drop of the drug was instilled once on the conjunctiva, under the upper eyelid of the left eye (the right eye served as a control – 1 drop of distilled water). The reaction was taken into account twice. After applying the tissue preparation after 5 minutes, no sharp hyperemia of the lacrimal duct and sclera was observed, no reaction was observed after 15 minutes, which indicates the absence of a long-term irritant effect.

The biological activity of the tissue preparation (Tesnormin-V) was determined on intact female white mice. They were injected subcutaneously in the back area with different doses of the drug (0,3 and 0,5 ml). After 48 hours, the tissue preparation was administered in the same doses. The control mice were not injected with the drug. After 72 hours, the mice were euthanized, opened, the uterus and ovaries were removed and weighed.

Weighing showed that the mass of the uterus and ovaries increases by 1.5-2 times.

It has been established that the tissue preparation is non-toxic, well tolerated by animals, does not have a long-term irritating effect, has biological activity against the genital organs.

3.4. Development of a method for diagnosing subclinical mastitis in sows

For faster detection of animals with subclinical mastitis, an inexpensive and simple method for diagnosing subclinical mastitis with Progress 20M liquid detergent has been developed (patent No. 2450268 was obtained for the diagnostic method).

To determine the approximate degree of dilution of Progress 20M used for the diagnosis of latent mastitis in sows, 93 milk samples were examined. During the reaction, dilutions of Progress 20 with water were used in the ratio - 1:4, 1:12, 1:19.

To find out a more accurate degree of dilution of Progress 20M, another 30 milk samples were examined. Dilutions were used during the reaction - 1:2, 1:4, 1:8, 1:12, 1:19.

To clarify the results, 108 more milk samples were examined, where dilutions of diagnostic with water were used in the ratio-1:2, 1:4, 1:8, 1:12. As a control, a 5% mastidine solution and a settling sample were used.

The result was evaluated according to the criteria: the formation of a clot, the appearance of a string, or flakes was considered a sign of a positive reaction to the presence of latent mastitis; the appearance of small, barely noticeable grains, a slight change in the consistency of the milk sample when the reagent was added was considered a dubious reaction; a homogeneous, easily mixed liquid mass on a slide was considered a negative test reaction for the presence of latent mastitis.

The conducted studies allowed us to establish that the dilution of Progress 20M 1:4,1:12 and 1:19 gave a large discrepancy in the results of the test reaction compared with the control (5% mastidine and a breakdown of settling). A positive reaction was recorded in 59.9% of the samples studied, while when using a 5% mastidine solution and a sedimentation test, this reaction was observed in 40,8% and 34,4% of cases. Questionable reaction was in 5,4% of samples when using progress20M and in 10,8% and 15,1% in the case of mastidine and sedimentation tests. A negative reaction was noted in 38,7% of the samples, which is 9,7% less than in mastidine and 11,8% less than in the settling sample.

Studies conducted to determine a more accurate degree of dilution of Progress 20M liquid detergent allowed us to establish that it is - 1:2. In this dilution, a positive reaction was observed on average in 41,6% ((43,3 + 39,81)/2) milk samples, when using 5% mastidine, this reaction was observed on average in 35,7 ((43,3+40,8+23,1)/3) samples, and the milk sedimentation test gave a positive reaction of 31,59% ((40+34,4+20,37)/3) samples.

The discrepancy with respect to mastidine in a doubtful reaction was 3,328% ((0+11)x100/138)-((16+0+10) x100/231), and with respect to the settling sample of 4,6% ((0+11)x100/138)-((14+0+15) x100/231). Negative reaction in 56.6-50% of samples (on average 51,4%), which is 4,4% less than in mastidine and 7,5% less than in the settling sample.

We conducted an experiment on 138 milk samples using Progress 20M liquid detergent in the dilution of 1:2 and 5% mastidine as a clarification of how much and which of these two diagnostics more accurately reveals latent mastitis. The control was a sample of milk settling.

It has been established that Progress 20M detects latent mastitis in sows more accurately than mastidine. The discrepancy in the positive reaction relative to the control in Progress 20M is 16%, and in mastidine 2,9%, which is 13,1% less than in Progress 20M. The use of Progress 20M makes it possible to identify 3,7% and 2,9% fewer samples giving a questionable reaction and comparing with mastidine and control, respectively. An experienced diagnostician accurately registers a negative reaction. When using Progress 20M, a negative reaction in 51,4% of cases, which is 13,1% lower compared to the settling test, and mastidine is 3,6% lower.

The use of Progress 20M in 1:2 breeding with water as a diagnosis of latent mastitis in sows allows you to identify more animals whose milk gives a positive result in a test reaction for the presence of subclinical mastitis. A patent has been obtained for a method of diagnosing mastitis.

Observation of suckling piglets who consumed milk that gave a positive, and in some cases, questionable reaction to the presence of latent mastitis confirmed the correctness of the test reaction by the fact that most suckling piglets subsequently developed symptoms of exhaustion, intoxication and diarrhea.

3.5. Reproductive qualities of sows depending on the means and methods of therapeutic and preventive measures for subclinical mastitis

3.5.1. The effectiveness of therapeutic measures for subclinical mastitis in sows with the use of PIVS and tissue preparation

The results of studies on the effectiveness of the use of oxytetravit, bicillin5, TesnorminaV, PIVS and enroflox are presented in Table 3.1.

Table 3.1. The survival of piglets depending on the treatment regimen of subclinical mastitis of sows by various means

Groups	**n**	Piglets were born (heads)	% piglets					
			Sick piglets		Mortality		Survival	
			heads	%	heads	%	heads	%
Experimental 1	10	94	58	61,70	43	45,70	51	54,30
Experimental 1	10	102	32	31,40	29	28,43	73	71,56
Experimental 1	10	108	-	0	27	25	81	75
Control	11	103	21	20,39	17	16,50	86	83,50

During the treatment of latent mastitis with oxytetravitis, 45,7% of the offspring died in the sow, the morbidity of piglets was 61,7%. When using only the drug PIVS, the morbidity of piglets decreased by almost 2 times and amounted to 31,4%, and the survival increased by 17%. In group 3, 25% of the offspring mortality, which is 20,7% (2 times) less than in group 1 and 3,43% less than in group 2. The survival of piglets increased by 20,7% (1,5 times) and 3,44% compared to the 1st and 2nd groups, respectively. There were no cases morbidity of piglets in group 3. In the control group, the survival of piglets was 83,5%, and the morbidity was 20,39%.

It has been established that the therapeutic effect is higher with the simultaneous use of PIVS and tissue preparation (Tesnormin-V), which is confirmed by changes in biochemical and hematological parameters of blood.

3.5.2. The effect of the preparations of PIVS and tissue preparation (Tesnormin-V) on some reproductive parameters in sows

The results of studies on the effect of PIVS and tissue preparation on the reproductive performance of sows are presented in Table 3.2. and Table 3.3.

Table 3.2. Some reproductive indicators in sows in the treatment of subclinical mastitis with a tissue preparation (Tesnormin-V) and PIVS

Groups	N	Piglets were born		Sick piglets			Mortality			Survival		
		n	$\bar{x}$	n	$\bar{x}$	%	n	$\bar{x}$	%	n	$\bar{x}$	**%**
Experiment	13	138	10,60±1,70	24	1,85±1,40	17,30	11	0,90±0,10*	7,90	127	9,70±1,90	92
Control	17	167	9,80±3,00	34	2,00±1,50	20,30	25	1,50±0,10	14,80	142	8,30±2,60	85

*The differences are statistically significant. N - is the number of sows, n - of piglets.

10,6±1,74 piglets were obtained from each sow of the experimental group, 1,85±1,40 were sick and 0,9±0,1 died, 9,7±1,91 piglets remained. In the control group, each sow had an average of 9,8±3,05 piglets, 2,00±1,53 were morbidity and 1,5±0,1 piglets died, 8,3±2,60 piglets per sow remained.

In the experimental group, 24 (17,3%) were sick, which is 1,5 times less than in the control group, where 34 (20,3%) piglets were sick. In the experimental group, 11 (7,9%) piglets died, which is 2 times (7,07%) less than in the control group, where 25 (14,97%) died.

In the experimental group (Table 3.3.), the survival of piglets was 92% (127 out of 138 remained). In the control group (142 out of 167 remained), the survival of piglets was 85,02%, which is 6,98% lower than in the experimental group.

Table 3.3. Reproductive indicators in sows in the treatment of subclinical mastitis with a tissue preparation (Tesnormin-V) and PIVS

Indicators	Groups			
	Experimental		Control	
Number of sows	13		17	
1-4 day after farrowing				
Piglets were born (heads)	138		167	
On average per sow (heads)	10,6±1,74		9,8±3,05	
Piglet's birth weight (kg)	1,419 ±0,22		1,407±0,16	
Nest weight (kg)	15,06±1,72		13,82±3,40	
10-14 day after farrowing				
There are piglets left (heads) or (%)	127	92%	142	85,02%
On average, one sow remains	9,7±1,91	91,5%	8,3±2,60	84,69%
Weight of one piglet (kg) и (%)	2,73±0,2	+92,38%	2,5±0,20	+ 83,5%
Nest weight (kg) / and increase (%)	26,7±4,0*	+77,29%	21,4±6,54	+54,88%
Body weight (kg) and increase %	1,3	+ 92,4%	1,155	+82,09%

*The differences are statistically significant.

The weight of piglets of both groups at birth was almost the same. The weight of piglets of the experimental group increased by 92,38% to the weight at birth. The body weight of piglets in the control group increased by 83,5%. The nest weight in the experimental group increased by 77,29%, and in the control group by 54.88%. The average body weight gain per piglet in the experimental group was 1,311 kg (+ 92.4%), and in the control group 1,155 kg (+ 84,094%). The survival of piglets of the experimental group is 92%, and in the control group 85,02%.

The damage, due to the death of piglets in the experimental group, amounted to 30,03 kg of meat, which is 2 times less than in the control, where 64,05 kg of meat was not received. Considering that 1 kg of pork costs 42 lei (at the time of research), the damage in the experimental group is 1261,26 lei, and in the control 2690,1 lei, which is 1428,84 lei more than in the experimental group (Table 3.4.).

Table 3.4. The amount of losses for 10-14 days after farrowing (in kg) due to the death of piglets

Groups	Piglets were born	Average weight of a piglet on day 1-4 (kg)	Mortality	Average weight of a piglet on day 10-14 (kg)	Losses in kg due to the death
Experimental	138	1,419	11	2,730	30,03
Control	167	1,407	25	2,562	64,05
Difference	29	0,012	14	0,168	34,02

The results of the study of the therapeutic efficacy and the effect on the survival and morbidity of piglets of the means of PIVS and tissue preparation are presented in Table 3.5.

Table 3.5. Results of the therapeutic efficacy of the combined use of a tissue preparation (Tesnormin-V) and PIVS

Groups	swis n	Piglets were born	% piglets					
			Sick piglets		Mortality		Survival	
			heads	%	heads	%	heads	%
Experimental	40	429	33	7,70	48	11,20	381	88,81
Control	52	495	119	24,04	88	17,78	407	82,22

In the experimental group, the morbidity of piglets was 7,7%, which is 3 times lower than in the control group, where 24,04% of piglets were sick. In the experimental group, 11,2% of piglets died, which is 1,6 times lower than in the control group, where 17,78% died. The survival of piglets of the experimental group is 88,81%, which is 6,59% more than in the control.

It has been established that the use of beer and tissue preparation (Tesnormin-V) promotes the growth of the reproductive potential of sows, reduces economic damage, increases the safety of the resulting offspring.

3.5.3. Preventive efficacy of tissue preparation (Tesnormin-V) and PIVS in subclinical mastitis in sows 45-40 and 7-3 days before farrowing

Data on the preventive effectiveness of the tissue preparation and the PIVS for 45-40 days before farrowing are set out in Table 3.6.

Table 3.6. Indicators of the preventive effectiveness of drugs used for 45-40 days before farrowing

Groups	n	Number of animals and test reaction results					
		Positive test reaction		Questionable test reaction		Negative test reaction	
		heads	%	heads	%	heads	%
Experimental 1	11	3	27,27	4	36,36	4	36,36
Experimental 2	11	5	45,45	3	27,27	3	27,27
Control	11	7	63,64	1	9,40	3	27,27

In the 1st experimental group of sick sows 63,64% (27,27+36,36), which is 9,1% lower than in the 2nd experimental and control groups, where 72,73% (45,5+27,27) and 73,03% (63,64+9,4) morbidity, respectively. A single injection of a tissue preparation allowed 2,5 times to reduce the number of sows whose milk gives a positive test reaction for the presence of latent mastitis.

To determine the degree of preventive efficacy of a tissue preparation, depending on the time of administration before farrowing, in the 1st group, Tesnormin-V was administered 45-40 days before farrowing. In the 2nd experimental group, Tesnormin-V was administered 3-7 days before farrowing (Table 3.7.)

Table 3.7. The effectiveness of prevention of subclinical mastitis when using a tissue preparation 7-3 days before farrowing

Groups	n	Positive test reaction		Questionable test reaction		Negative test reaction	
		n	%	n	%	n	%
Experimental 1	11	3	27,20%	4	36,40%	4	36,40%
Experimental 2	23	5	21,70%	1	4,30%	17	73,90%
Control	25	14	56%	5	20%	6	24%

The morbidity of latent mastitis in the 1st experimental group is 27,2%, which is 28.8% lower compared to the control. 36,4% did not get sick, which is 12,4% more than in the control. In the 2nd experimental group, 21,7% got latent mastitis, which is 2,5 times less than in the control. In the 2nd experimental group, the pain was 5,5% less than in the 1st experimental group. Therefore, early prevention of latent mastitis 40-45 days before farrowing can reduce the morbidity by 2 times, and 7-3 days before farrowing by 2,5 times.

Administration of the tissue preparation Tesnormin-V to sows for prophylactic purposes 7-3 days before farrowing was accompanied by certain changes in blood parameters (Table 3.8).

Table 3.8. Blood parameters of sows before and after preventive measures with tissue preparation Tesnormin-V

Indicators		Before prevention, 7-3 days before farrowing	After prophylaxis for 3-7 days after farrowing	
			Control	Experimental
Eritrocite 10^{12}/l		5,6±0,03	5,38±0,05*	5,68±0,03*
Leucocite 10^{9}/l		14,38±0,04	15,06±0,1*	14,88±0,06**
Hb g/l		115,6±0,5	123,6±0,8*	123,6±0,51*
Eozinofile %		6,6±0,24	7,8±0,37*	5,8±0,37
Neutrofile nesedimentare%		8,0±0,31	3,8±0,21**	3,6±0,25**
Neutrofil sedimentare%		37,0±0,31	31,2±0,49**	3,3±0,44**
Limfocite %		45,6±0,87	53,8±0,52*	53,6±0,67*
Monocite %		1,4±0,24	2,3±0,51**	2,8±0,37**
VSE mm/h		5,615±0,63	5,8±0,474	6,714±0,57
Proteina total g/l		73,4±0,5	75,9±0,01*	74,8±0,35*
Albumine g/l		39,8±0,37	43,8±0,3*	42,4±0,4*
Globuline	α- globuline %	20,8±0,3	17,4±0,4**	16,0±0,31**
	b- globuline %	12,0±0,7	17,4±0,31**	18,0±0,77**
	γ-globuline %	22,36±4,9	22,6±0,6	23,6±0,51
Ca mmol/l		2,42±0,03	2,2±0,88	2,44±0,05
P mmol/l		1,9±0,04	1,9±0,04***	1,7±0,1
Urea mmol/l		3,099±0,23	3,657±0,36	3,834±0,17
Trigliceride ммоль/l		0,767±0.06	0,174±0,01**	0,232±0,02*
Glucoza ммоль/l		4,85±0,12	4,37±0,16	4,67±0,14
Fosf.alcalina U/L		163,65±8,8	166,157±6,08	174,77±14,6
ALT U/L		32,22±2,8	39,014±1,1	34,18±2,40
AST U/L		33,65±3,3	50,33±7,45	35,12±3,01

Significantly for the period before prevention: P<0.001***; P<0.01**; P< 0.05*.

Analysis of the data obtained during the study of blood samples of animals that were injected with a tissue preparation (Tesnormin-V) 3-7 days before farrowing for the prevention of subclinical mastitis showed that the studied parameters were within the physiological norm: the level of erythrocytes practically did not change and remained within the physiological norm, there was a slight increase in Hb and the level of leukocytes and lymphocytes, a decrease in the number of segmented neutrophils. The number of monocytes increased by 64%. The erythrocyte sedimentation rate (ESR) increased in the experimental group to 6.71±0.57 mm/h, and in the control group to 5.8±0.47 mm/h.

In the experimental group, the level of total protein increased by 1.9%. The amount of albumins in the blood serum of animals after administration of Tesnormin-B increased by 10.1% and amounted to 43.8 ± 0.3. At the same time, there was a significant decrease in α-globulins by 16.4%, to 17.4 ± 0.4, and the content of β-globulins increased to 17.0 ± 0.31. The Ca level in the control group decreased to 2.44 mmol/L, whereas in the group where Tesnormin-V was administered, the Ca level practically did not change compared to the Ca level before the prophylaxis. The number of P remained almost unchanged in both groups.

In experimental animals of both groups, the initial urea level averaged 3.1±0.23 mmol/l. After 7 days, the amount of urea in the blood serum increased in animals of both groups, but slightly more in the experimental group.

The concentration of triglycerides decreased in both groups compared to the baseline data by 69.7% in the experimental group and by 77.3% in the control. In both groups, glucose concentration decreases, a slight increase in alkaline phosphotase is noted, and there is a tendency to increase the level of AlAT and AsAT.

Therefore, the drug used helps to reduce the level of morbidity and does not have a negative effect on the animal body.

3.5.3.1. Morbidity, mortality and safety of suckling piglets depending on the drug used for the prevention of latent mastitis.

The level of morbidity, mortality and safety of offspring is indicated in Table 3.9.

Table 3.9. Dynamics of morbidity and survival of piglets in the prevention of latent mastitis in sows before farrowing with various drugs

Groups	N	Piglets were born		Sick piglets			Mortality			Survival		
		n	$\bar{x}$	*n*	$\bar{x}$	%	*n*	$\bar{x}$	%	*n*	$\bar{x}$	%
Experimental 1	18	226	12,50±1,0	10	0,55±0,377	4,40	18	1±0,373	7,96	208	11,50±0,80*	92,00
Experimental 2	24	229	9,50±0,40	22	0,90±0,20	9,60	20	0,80±0,20	8,73	209	8,70±0,40	91,20
Control	14	140	10±1,86	18	1,28±0,69	12,80	17	1,20±0,03	12,10	123	8,7±2,40	87,80

*The differences are statistically significant. N - is the number of sows, n - is the number of piglets.

It was found that when the antibiotic was administered to the uterus before farrowing, the survival of piglets was 91,26%, and when using a tissue preparation, the survival was 92%, this is 0,74% more than in the 2nd experimental and 4,25% more than in the control. In the control group, 12,8% of the offspring were sick, while in the experimental groups, 1,3-3 times fewer animals were sick - 9.6% and 4,4%.

A number of experiments were conducted to determine the drug or complex of drugs in which the morbidity of latent mastitis will be minimal (Table 3.10).

Table 3.10. The morbidity of mastitis, depending on the method and means of prevention

Groups	Means of prevention	n	Sick		No sick	
			n	%	n	%
1	Tissue preparation+Bicillin-5	23	6	26,10	17	73,90
2	Tissue preparation 7-3 days before farrowing	9	4	44,40	5	55,60
3	Bicillin-5	29	21	72,40	8	27,60
4	Tissue preparation+PIVS	18	5	27,80	13	72,20
5	Negative control	29	18	62,10	11	37,90

When using a tissue preparation with bicillin-5, the morbidity of latent mastitis is 26.1%, which is 1,7% less than when using a tissue preparation with PIVS, where the morbidity of latent mastitis is 27,8%.

When only a tissue preparation was administered 3-7 days before farrowing, 44,4% of sows became ill with latent mastitis. With the introduction of bicillin-5, 72.4% were ill, which is 10,3% more than in the 5th group (control), 1,5, 2,5 and 3 times more than in the 1st, 2nd and 4th experimental groups.

The results of determining a drug or a complex of drugs where the minimum morbidity of mastitis is combined with the minimum morbidity of piglets and the maximum level of survival of piglets are indicated in Table 3.11.

Table 3.11. The survival of piglets depending on the means of prevention and the level of morbidity of sows with latent mastitis

№	Means of prevention	N	Sick		No sick		Piglets						
							Was born	Sick		Died		Survival	
			N	%	N	%	n	n	%	n	%	n	%
1	Tissue preparation+bicillin5	12	3	25	9	75	110	11	10	7	6,40	103	93,6
2	Tissue preparation	9	4	44,40	5	55,60	113	5	4,40	9	7,96	104	92
3	Bicillin 5	24	18	75	6	25	229	22	9,60	20	8,73	209	91,3
4	Tissue preparation+PIVS	18	5	27,80	13	72,20	183	5	2,70	8	4,40	175	95,6
5	Negative control	29	18	62,10	11	37,90	269	30	11,20	22	8,20	247	91,8

N - is the number of sows, n - is the number of piglets.

The morbidity rate of piglets when using a tissue preparation in combination with antibiotics was 10%, and in the control-11,2%, which is 3,7 and 4,2 times more than when using Tesnormin-B in combination with PIVS, where only 2,7% piglets sick.

The use of the tissue preparation Tesnormin-V with PIVS helps to reduce the morbidity of latent mastitis to 27,8%, when using a tissue preparation with antibiotics to 25%. The use of only a tissue preparation reduces the percentage of sows with latent mastitis to 44,4%, and the introduction of bicillin-5 to 75%, which is even higher than in the control group, where the morbidity of latent mastitis is 62,1%.

The case of piglets with the introduction of a tissue preparation and bicillin-5 was 6,4%, in the 5th (control) group 8,2% died. This is 1,5 and 1,9 times more than with the use of the means of PIVS and tissue preparation. In the 4th group, 4,4% of piglets died. The survial of piglets with the introduction of Tesnormin-V and bicillin5 was 93.6%, and in the control group – 91,8%. The use of a tissue preparation together with PIVS contributes to an increase in the survival of piglets up to 95,6%. When using only a tissue preparation, the morbidity of piglets is 4,4%, and the survival is 92%, which is 2 times (5,2%) less than with the introduction of the antibiotic bicillin-5, when the survival of piglets is 91,26%, and the morbidity is 9,6%. The morbidity of piglets with the use of only a tissue preparation or only an antibiotic is 4,4% and 9,6%, and the survival is 92% and 91,6%, respectively.

It was found that the lowest level of morbidity and mortality of offspring with the combined use of PIVS and Tesnormin-V.

3.6. Reproductive qualities and effectiveness of therapeutic and preventive measures for postpartum endometritis of sows

3.6.1. Reproductive qualities of sows when performing therapeutic and measures with the use of tissue preparation and products containing chelated iodine and extracts of medicinal plants

The results of studies of the reproductive qualities of sows when using a tissue preparation and products containing extracts of medicinal plants are set out in Table 3.12., Table 3.13., Table 3.14.

Table 3.12. Reproductive potential in the treatment of postpartum endometritis

Groups	**n**	The period between farrowing (days)		Difference (days)	Duration of therapy (days)
		Before research	After the study		
Experimental 1	14	176,50 ± 6,123	164,33 ± 6,645	12,17	4,44 ± 0,358*
Experimental 2	10	186,60 ± 12,74	180,75 ± 9,12	5,85	4,22 ± 0,386*
Control	14	185,85 ± 7,49	183,28 ± 6,168	2,57	5,83 ± 0,350

*The differences are statistically significant.

The duration of therapy in the experimental groups is less than in the control group and amounted to: 4,44 ± 0,358 days in the 1st experimental group, 4,22± 0,386 days in the 2nd experimental group. This is 1,39 and 1,61 days (23,84% and 27,65%, respectively) less than in the control. Recovery was diagnosed with complete cessation of discharge from the genital tract during the day.

The period between farrowing in the experimental groups after therapy is less than in the control group and was 164,33±6,645 days in the 1st experimental group and 180,75±9,12 days in the 2nd experimental group. This is 12,17 and 5,85 days less than in the control, where this indicator was 2,57 days.

Table 3.13. Reproductive indicators in the treatment of postpartum endometritis

Groups	n	Interval from farrowing to insemination (days)		Difference (days)	The interval from weaning to insemination		Difference (days)
		Before therapy	After the therapy		Before research	After the study	
Experimental 1	10	67,00±8,70	61,50±8,10	5,50	22,40 ± 6,90	17,25 ± 5,01	5,15
Experimental 2	10	58,00±5,62	51,60±5,95	6,40	15,60 ± 3,18	9 ± 3,36	6,60
Control	10	59,20±7,24	54,70±5,92	4,50	20,80 ± 5,04	18,80 ± 4,93	2

After the studies, the interval from farrowing to fruitful insemination of sows in the experimental groups decreased by 5,5 and 6,4 days and amounted to 61,5 ±8,10 and 51,6±5,95 days. In the control group, the interval between farrowing and insemination of sows was 54,7±5,92 days, which is 4,5 days less than before the studies.

The interval from weaning to fruitful insemination of sows (at their first arrival in the hunt) in the experimental groups decreased by 5,15 and 6,6 days and amounted to 17,25 ± 5,01 and 9±3,36 days.

In the control group, the interval between weaning of piglets and insemination of sows was 18,8 ± 4,93 days, which is 2 days less than before the studies.

It was found that the parameters of reproductive potential (Table 3.13.) they ranged from: multiplicity – from 9,1±0,744 to 11,125±0,586 heads; nest weight at birth – from 10,61±0,547 to 13,73±0,931 kg; large–from 1,1917±0,05 to 1,327±0,023 kg.

Table 3.14. Some reproductive qualities of sows in various methods of therapy for postpartum endometritis

Reproductive qualities of sows	Groups		
	Control	Experimental 1 (fam. *Lamiaceae*)	Experimental 2 (fam. *Asteraceae*)
Farrowed sows	7	8	9
Number of piglets in the litter (heads)	73	89	91
Multiplicity (heads)	10,428±0,77	11,125±0,586	9,1±0,744
Nest weight at birth	13,73±0,931	14,725±0,577	10,61±0,547*
Big piglets (kg)	1,319±0,021	1,327±0,023	1,1917±0,05
Milk content (kg) nest weight for 21 days	63,285±6,707	70±5,24	58,93±6,1
Increasing the m of the nest in 21 days (times)	4,609	4,753	5,554
Survival for 21 days after farrowing	8,571±0,701	9,75±0,562	7,7±0,685
Piglet weight in 21 days	7,334±0,249	7,138±0,30	7,6072±0,202
Taken from a sow (heads) 35 days	60	78	77
Survival (%)	82,9	87,64	84,615

*The differences are statistically significant.

The milk content of sows in all groups ranged from 58,93±6,1kg to 63,285±6,707 kg. In the experimental groups, the nest mass increased by 4,753 and 5,554 times, which is 3,124% and

20,05% more than in the control group, where the nest mass increased by 4,609 times. The survival of the piglets by 21 days after farrowing in all groups ranged from 7,7 ± 0,685 to 9,75± 0,562 heads in the nest. When weaning, the survival of the piglets in the control was 82,9%, and in the experimental groups it was 4,74% and 1,715% more (87,64% and 84,615%).

Analysis of blood metabolic profile indicators showed that all drugs used in three groups (one control and two experimental) did not have a negative effect on the animals' body.

The new drugs proposed for therapy are effective in the treatment of postpartum endometritis of sows, do not have a negative impact on the productivity of sows and contribute to the improvement of some reproductive indicators.

Such changes can be explained by the fact that a tissue preparation was used in the experimental groups. It is known that tissue preparations have not only a growth-stimulating effect, but also indirectly stimulate the body's immune system, stimulate hematopoiesis. This, in turn, accelerates the production of antibodies, and therefore reduces the duration of therapy.

It should be noted that in the iodine-containing preparations used by us, the biologically active form is iodine in a positively monovalent form with an oxidation state of +1. Such iodine in combination with high polymers loses its toxicity and locally irritating effect on soft tissues, easily interacts with the cell membrane, does not have an irritating effect on uterine tissues, destroys pathogenic microflora, stimulates uterine tone, which contributes to faster tissue cleansing and endometrial restoration. The extracts of medicinal plants included in the composition of iodine-containing preparations surpass some antibiotics in their bactericidal properties, and therefore the purification of the uterine cavity from pathogenic microflora is accelerated, which also reduces the duration of therapy.

Thus, it was found out that the reproductive potential of sows increases when performing therapeutic measures with the use of a tissue preparation and products containing chelated iodine and extracts of medicinal plants.

3.6.2. Reproductive qualities of sows when performing preventive measures with the use of tissue preparation and products containing chelated iodine and extracts of medicinal plants

In production conditions, 4 groups were formed (2 experimental and 2 control groups). The two control groups were because the studies were carried out in the conditions of the farm, which at that time did not have a sufficient number of sows to conduct simultaneous studies on a large livestock. The results of the determination of the reproductive qualities of sows in the prevention of endometritis with the help of drugs containing extracts of medicinal plants and iodine with amylodextrin are presented in Tables 3.15 and 3.16.

Table 3.15. Results of the preventive effectiveness of the proposed funds

Groups	n	Sick (heads)	Does not get sick (heads)	% sick	Difference %	% healthy
Control 1	30	8	22	26,66	5,04	73.34
Experimental 1	37	8	29	21,62		78,38
Experimental 2	34	9	25	26,47	3,83	73,53
Control 2	33	10	23	30,30		69,710
Total (heads)	134	35	99	25,92	-	74,08

Table 3.14 indicates that the maximum morbidity rate in the control 2 – 30,30%, the minimum in the experimental group1-21,62%. In both experimental groups, the morbidity is

5,04% and 3,83% lower than in the control groups. There is an increase in the morbidity rate in July-September, both in the 2nd experimental and in the 2nd control group. However, there are fewer cases in the 2nd experimental group than in the 2nd control group.

Table 3.16. Reproductive qualities of sows in various methods of prevention of postpartum endometritis

Reproductive qualities of sows	Groups		
	Control (n)	Experimental 1 (fam. *Lamiaceae*)	Experimental 2 (fam. *Asteraceae*)
Farrowed sows	7	10	10
Number of piglets in the litter (heads)	67	65/40	94
Multiplicity (heads)	9,571±0,57	9,285±0,680	9,4±0,97
Nest weight at birth	12,64±0,741	12,48±0,955	12,4±1,28
Big piglets (kg)	1,321±0,0013	1,341±0,011	1,31±0,014
Milk content (kg) nest weight for 21 days	62,84±4,734	60,48±7,21	61,42±8,06
Increasing the m of the nest in 21 days (times)	4,342	4,452	4,838
Survival for 21 days after farrowing	8,14±0,46	8,285±0,011	8±0,96
Piglet weight in 21 days	7,07±0,33	7,311±0,259	7,648±0,202
Taken from a sow (heads) 35 days	57	58	80
Survival (%)	85,074	89,23	85,106

Table 3.16 shows that the milk production of sows increased by more than 4 times in all groups by 21 days after farrowing. In the control, this indicator increased by 4,342 times, and in the experimental ones by 4,452 and 4,838 times. This is 2,533% and 11,42% more than in the control. The safety of the piglets for weaning (at the age of 35 days) in the control was 85,074%, and in the experimental 89,23% and 85,106%. Which is 4,927% (1,04 times) and 0,1% (1,0007 times) more than in the control.

Consequently, the tissue preparation and products containing chelated iodine and extracts of medicinal plants used for the prevention of postpartum endometritis of sows contribute to an increase in reproductive potential.

3.7. Economic efficiency and expenditure of therapeutic and preventive means

1. In *the treatment of latent mastitis of sows and diarrhea in the piglets*:

The lowest costs for the treatment of one sow when using PIVS and PIVS+Tesnormin-V – 9,756 lei and 16.86 lei. The cost of piglets' therapy when using beer+Tesnormin-V. Costs including piglet therapy: in group 1: from (18,876*10)+220.28=409.04 lei to 188.76+513.99=702.75 lei; in group 2: from (9,756*10)+121.53=219.09 lei to 97.56+283.584=381.144 lei; in group 3: from (9,756*10)+121.53=219.09 lei to 97.56+283.584=381.144 lei group: (16,86*10)+0=168,60 lei; in negative control: from 79.75 lei to 186,102 lei.

The damage caused by the death of piglets on 10-14 days after farrowing in the control is 2690.1 lei, which is 1428.84 lei more than in the experiment (considering that 1 kg of pork costs 42 lei).

2. In the prevention of latent mastitis of sows and diarrhea in piglets:

- lower costs for preventive measures when using Tesnormin-V in the experimental group – 7,004 lei. Costs taking into account piglet therapy: in group 1: 164,052 - 214,692 lei; in group 2, 386,004 - 497,408 lei; in control: 68,364 – 159,16 lei.

3. In the treatment of postpartum endometritis:

the cost of treatment of one uterus in the 1st and 2nd experimental groups is 12,608-21,64 lei and 12,633-21,715 lei, respectively.

4. With measures *for the prevention of postpartum endome*tritis: in the control, the costs were lower, but the incidence of sows with postpartum endometritis was 28,71%, which is more than in the 1st and 2nd experimental groups by 7,09% and 12,24%, respectively. Taking into account the cost of therapy and the level of safety of piglets, it is economically more profitable to use the drugs used in the 1st and 2nd experimental groups (Tesnormin-V + intrauterine preparations containing plant extract from fam. *Lamiaceae* or from the family. *Asteraceae* and iodine compound with high polymers).

Conclusion based on the research results:

Subclinical mastitis on „ Moldsuinhibrid" is registered in 59,2% of sows.

The seasonality of the disease with latent mastitis was revealed. The largest number of queens get sick in April and August - from 70% to 72,7%. The lowest morbidity rate in the autumn period is 43,3 % and in June - 50%.

A higher percentage of the number of patients with latent mastitis on the 1st and 3rd quarters of the year – 62,1%% and 58,1%, and in the 2nd and 4th quarters it decreases to 55,7% and 45,5%.

Postpartum endometritis is registered in 20,32% of farrowed sows.

The seasonality of the disease of farrowed sows with postpartum endometritis has been established. The peak incidence was in March – August, from 18,84% to 29,68% had endometritis. In the autumn and winter months, the morbidity decreases to 11,76%.

A higher percentage of the number of patients with endometritis in the 2nd and 3rd quarters of the year – 22,63% and 24,76%, and in the 1st and 4th quarters this indicator decreases to 15,43% and 15,71%.

The isolated microflora is resistant or insensitive to many atibiotics.

To diagnose latent mastitis of sows, you can use liquid detergent Progress20M in a 1:2 dilution with tap water.

It was found that using Progress 20M, it is possible to identify 1,5-2 times more sows with latent mastitis (comparison with 5% of mastidine and a breakdown of settling).

A test on white mice showed that the tissue preparation (Tesnormin-V) is well tolerated by animals, harmless and has biological activity.

With the combined use of a tissue preparation and an iodine-containing preparation of PIVS for the treatment of latent mastitis of sows, the morbidity piglets decreased to 8,65% ((0+17,3)/2), and the survival piglets increased to 90,45% ((88,81+92)/2).

In the treatment of latent mastitis with Tesnormin-V drugs on the 10th-14th day after farrowing, the weight of the nest increased by 77,29%, the weight of the piglet by 92,38%, and in clinically healthy sows, the weight of the nest increased by 54,88%, and the weight of one piglet by 82,09%.

A single injection of Tesnormin-V 40-45 days before farrowing allowed a 33,3% reduction in the morbidity of sows with subclinical mastitis.

Depending on which drugs the tissue preparation was used in combination with, its preventive efficacy ranged from 36,36% to 73,9%.

- the combined use of Tesnormin-V and Bicilin5 allowed to reduce the percentage of sows with latent mastitis to 25,55% ((25+26,1%)/2), at the same time, the morbidity of piglets was 10%, and the survival was 93,6%.

- with the introduction of Tesnormin-V 7-3 days before farrowing, the morbidity of latent mastitis is 44,4%, the survival of piglets is 92%, the morbidity of piglets is 4,4%.

- with the introduction of Bicillin5 7-3 days before farrowing, the morbidity of sows with latent mastitis is 73,7%, the survival of piglets is 91,26%, the morbidity of piglets is 9,6%.

- when administered 7-3 days before farrowing, Tesnormin-V and PIVS, the morbidity of latent mastitis was 27,8%, the survival of piglets was 95,6%, the morbidity of piglets was 2,7%.

When treating postpartum endometritis with Tesnormin-V and preparations containing iodine with amylodextrin and extracts of medicinal plants, the duration of therapy was reduced by 23,84% and 26,75%. The inter-spring period decreased by 12,7 and 5,85 days.

The interval from farrowing to insemination decreased by 5,5 and 6,4 days, and the interval from weaning to fruitful insemination decreased by 5,15 and 4,5 days.

The milk content of sows in the experimental groups is greater by 3,124% and 20,05% than in the control.

The survival of the piglets in the experimental groups is 4,74% and 1,715% more than in the control.

When using a tissue preparation with high-molecular iodine compounds containing extracts of medicinal plants for the prevention and prevention of the development of postpartum endometritis, the morbidity rate decreased by 5,04% and 3.84%.

The milk production of sows in the experimental groups was 60,48±7,21 and 61,42±8,06 kg.

The nest weight in the experimental groups by day 21 is 2,533% and 11,42% higher than in the control.

By weaning, the survival of the piglets in the experimental groups is 2,5% higher.

In the study of biochemical and hematological blood parameters in the course of therapeutic and preventive measures, there was a tendency to change individual blood parameters within the physiological norm.

CONCLUSIONS

1. In the conditions of the experimental farm, subclinical mastitis is registered on average in 59,2% of sows, postpartum endometritis in 20,32% of sows, and depending on the season of the year, the incidence of mastitis can range from 43,3% to 72,7%, and endometritis - from 11.76% to 29,8%.

2. Diagnosis of subclinical mastitis of sows with Progress 20M in 1:2 dilution with water allows to identify 1,5-2 times more sows with latent mastitis (compared with 5% mastidine solution and sedimentation test).

3. The proposed means and methods of therapy of subclinical mastitis and postpartum endometritis of sows allow for subclinical mastitis to reduce the incidence of suckling piglets to

8,65%, increase the safety of offspring to 90,45%, and reduce the duration of therapy of postpartum endometritis by 26,75%.

4. The proposed means and methods of prevention of subclinical mastitis and postpartum endometritis of sows allow almost 2 times to reduce the incidence of sows with these pathologies, as well as to reduce the incidence of suckling piglets to 2,7%, to increase the safety of offspring to 95,6%.

5. When using new means of therapy and prevention of postpartum pathologies of sows, the inter-litter period and the interval from farrowing to fruitful insemination are reduced by 12,7 and 5,15 days, respectively; the milk yield of sows increases by 20,05%; the safety of the offspring ranges from 84,615% to 95.6%; by the 21st day after farrowing, the mass of the nest increases up to 5,554 times; the body weight of one piglet increases by 92,38 by the 14th day of life%

SUGGESTIONS FOR PRACTICE

1. In order to preserve the reproductive qualities of sows and increase reproductive performance in the treatment and prevention of subclinical mastitis and postpartum endometritis in sows, it is recommended to inject the tissue preparation Tesnormin-V at the rate of 1 ml/150 kg of body weight, intrauterine administration of iodine with amylodextrin and extracts of medicinal plants from the *Lamiaceae/Asteraceae* families.

2. To monitor the morbidity of sows with subclinical mastitis, it is advisable to examine samples of milk taken immediately after farrowing in a test reaction with a liquid detergent Progress 20M in a 1:2 dilution with tap water.

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ADNOTARE

Osipciuc Galina „Potențialul reproductiv al suinelor în funcție de statusul fiziologic al organismului”, teză de doctor în științe biologice, Chișinău, 2023.

Structura tezei: introducere, patru capitole, discuția rezultatelor obținute, concluzii generale și recomandări practice, bibliografie din 244 de titluri, 149 pagini de text de bază, 5 figuri, 8 fotografii, 44 tabele, 8 anexe. Rezultatele obţinute sunt publicate în 42 de lucrări ştiinţifice și un brevet de invenție.

Cuvinte cheie: potențial reproductiv, scroafă, purcei, stimulatori biologici, terapie, profilaxie, diagnostic, mastită subclinică, endometrită postpartum, compuși tisulari și ai iodului, extracte de plante medicinale.

Scopul lucrării: studierea influenței asupra potențialului reproductiv al scroafelor și dezvoltării purceilor alăptați a compușilor biologici noi, elaborați și utilizați în diagnosticul, tratamentul și profilaxia mastitei latente și endometritei postpartum în scopul sporirii capacităților reproductive.

Obiectivele cercetării: stabilirea parametrilor morbidității scroafelor cu mastită subclinică si endometrită postpartum în condiți de întreprindere specializată; elaborarea unei metode simple, eficiente, sigure și ieftine pentru diagnosticarea mastitei subclinice la scroafe prin intermediul produsului „Progress 20M”; elucidarea eficacității măsurilor terapeutice și profilactice ale mastitei subclinice și endometritei postpartum prin utilizarea compușilor biologici „PIVS”, preparatelor tisulare și a remediilor pentru administrare intrauterină; determinarea indicilor reproductivi ai scroafelor prin intermediul mijloacelor noi ale terapiei și profilaxiei disfuncțiilor postpartum; elaborarea unor metode de sporire a capacităților reproductive.

Noutatea și originalitatea științifică: pentru prima dată în condițiile întreprinderii Republicii Moldova a fost studiată incidență mastitei subclinice și a endometritei postpartum la scroafe; a fost elaborată și implementată o nouă metodă de diagnosticare a mastitei latente folosind Progress 20M, a fost elaborat și aplicat complexul de măsuri terapeutice și profilactice pe componenți biologici din țesuturi de origine animală și vegetală și remedii pentru administrarea intrauterină; a fost studiat efectul noilor compuși biologic activi asupra productivității scroafelor în condiții de producție; a fost studiată interdependența dintre mastita subclinică, endometrita postpartum, menținerea sănătății și creșterea masei corporale a purceilor.

Rezultatul obținut, care contribuie la soluționarea unei probleme științifice importante: constă în elaborarea și utilizarea unor mijloace simple în preparare, ieftine și accesibile pentru diagnosticarea, terapia și prevenirea mastitei latente și a endometritei postpartum, care contribuie la reducerea disfuncțiilor proceselor fiziologice postpartum și ameliorarea capacităților reproductive ale porcinelor.

Semnificaţia teoretică: constă în elaborarea principiilor de bază pentru ameliorarea reproducerii porcilor prin evidența obligatorie a intervalelor optime de însămânțare, terapie și profilaxie a mastitelor subclinice și endometritelor postpartum în asociere cu menținerea sănătății și sporirea masei corporale a purceilor.

Valoarea aplicativă. În condiții de producție au fost testate metode și mijloace noi, simple, ieftine, economice pentru diagnosticarea, terapia și prevenirea disfuncțiilor postpartum. Metoda de diagnosticare nu dereglează fiziologia fluxului de lapte la scroafă, permite detectarea în timp util a patologiei, întreprinderea măsurilor adecvate și, prin urmare, reducerea pierderilor în creșterea porcilor. Metodele și mijloacele propuse în cercetare ameliorează calitățile reproductive, sporesc eficacitatea măsurilor de prevenție și terapie în disfuncțiile proceselor fiziologice postpartum, contribuie la recuperarea fiziologică rapidă a efectivului femel, reduce incidența morbidității și majorează nivelul de siguranță vitală al purceilor.

Implementarea rezultatelor științifice: rezultatele obținute au fost implementate la întreprinderea specializată în creșterea suinelor „Moldsuinhibrid” și emise prin actele Nr.1-3 privind introducerea schemelor de terapie și prevenire. 2450268 „Metoda mastitei subclinice la scroafe” și au fost elaborate recomandări practice „Diagnosticul, terapia și prevenirea mastitei subclinice la scroafe”.

АННОТАЦИЯ

Осипчук Галина «Репродуктивный потенциал свиней в зависимости от физиологического статуса организма», диссертация на соискание ученой степени доктора биологических наук, Кишинев, 2023.

Структура диссертации: введение, четыре главы, обсуждение полученных результатов, выводы, практические предложения, библиография из 244 источников, 149 страниц основного текста, 5 рисунков, 8 фотографий, 44 таблицы, 8 приложений. Полученные результаты отражены в 42 научных работах и в одном патенте.

Ключевые слова: репродуктивный потенциал, свиноматка, биостимуляторы, терапия, профилактика, диагностика, субклинический мастит, послеродовой эндометрит, тканевые и йодсодержащие препараты, экстракты из лекарственных трав.

Цель исследований: изучение влияния на репродуктивный потенциал свиноматок и развитие поросят сосунов новых, биологических соединений разработанных и применяемых при диагностике, терапии и профилактике скрытого мастита и послеродового эндометрита у свиноматок в целях повышения репродуктивных качеств.

Задачи исследований. определить степень заболеваемости свиноматок субклиническим маститом и послеродовым эндометритом в условиях специализированного хозяйства; разработать простой, эффективный, безопасный и дешевый способ диагностики субклинического мастита у свиноматок средством Прогресс 20М; выяснить эффективность лечебно-профилактических мероприятий субклинического мастита и послеродового эндометрита с применением биологических соединений ПИВС, тканевых препаратов и средств для внутриматочного введения; определить репродуктивные показатели свиноматок при использовании новых средств терапии и профилактики послеродовых патологий.

Научная новизна: - впервые в условиях предприятий Республики Молдова изучена распространенность скрытого мастита и эндометрита у свиноматок, разработаны и применены: новый способ диагностики скрытого мастита с использованием средства Прогресс 20М и комплекс лечебно–профилактических мер с использованием биологических средств из тканей животного и растительного происхождения и средств для внутриматочного введения, изучено влияние новых биологически активных соединений на продуктивность свиноматок в производственных условиях, изучена взаимосвязь между субклиническим маститом, эндометритом, сохранностью и приростом массы тела поросят-сосунов.

Полученный результат, способствующий решению важной научной проблемы: состоит в создании и применении простых в изготовлении и недорогих, доступных средств для диагностики, терапии и профилактики скрытого мастита и послеродового эндометрита, что способствует снижению уровня послеродовых дисфункций физиологических процессов и улучшению репродуктивных качеств свиней.

Теоретическое значение заключается в разработке базовых принципов улучшения воспроизводства свиней реализуемых с обязательным учетом оптимальных интервалов осеменения, терапии и профилактики субклинических маститов и эндометритов в асоциации с сохранностью здоровья и приростом массы тела поросят.

Практическая значимость. В производственных условиях апробированы новые, простые, дешевые, экономичные метод и средства для диагностики, терапии и профилактики послеродовых дисфункций. Метод диагностики не нарушает физиологию молокоотдачи у свиноматки, позволяет своевременно выявить патологию, принять соответствующие меры и таким образом снизить потери в свиноводстве. Предлагаемые соединения способствуют улучшению репродуктивных качеств, повышают эффективность профилактики и терапии при послеродовых дисфункций физиологических процессов, способствуют быстрому физиологическому востановлению маточного поголовья, снижают уровень заболеваемости и увеличивают уровень сохранности поросят сосунов.

Внедрение научных результатов: полученные результаты внедрены в специализированном свиноводческом диагностики предприятии «Moldsuinhibrid» и оформлены актами №1-3 о внедрении схем терапии и профилактики. На основании результатов исследований получен патент №2450268 «Способ субклинического мастита у свиноматок» и разработаны практические рекомендации «Диагностика, терапия и профилактика субклинического мастита свиноматок».

ANNOTATION

Osipciuc Galina „The reproductive potential of pigs depending on the physiological status of the organism" dissertation for the degree of Doctor of Biological Sciences, Chisinau, 2022.

The structure of the dissertation: introduction, four chapters, discussion of the results, conclusions, practical suggestions, bibliography from 244 sources, 149 pages of the main text, 5 figures, 8 photographs, 44 tables, 8 appendices. The results obtained have been published in 42 scientific papers and in one patent.

Key words: reproductive potential, sow, piglets, biostimulants, therapy, prevention, diagnostics, subclinical mastitis, postpartum endometritis, tissue and iodine-containing preparations, extracts from medical herbs.

The purpose of the research: to study the effect on the reproductive potential of sows and the development of suckling piglets of new biological compounds developed and used in the diagnosis, therapy and prevention of latent mastitis and postpartum endometritis in sows in order to improve reproductive qualities.

Research objectives. to determine the degree of morbidity of sows with subclinical mastitis and postpartum endometritis in a specialized farm; to develop a simple, effective, safe and cheap way to diagnose subclinical mastitis in sows with Progress 20M; to find out the effectiveness of therapeutic and prophylactic measures of subclinical mastitis and postpartum endometritis using biological compounds "PIVS", tissue preparations and intrauterine devices introduction; to determine the reproductive indicators of sows when using new means of therapy and prevention of postpartum pathologies.

Scientific novelty: - for the first time in the conditions of enterprises of the Republic of Moldova, the prevalence of latent mastitis and endometritis in sows has been studied, developed and applied: a new method for diagnosing latent mastitis using Progress 20M and a complex of therapeutic and preventive measures using biological agents from animal and plant tissues and intrauterine administration, the influence of new biologically active active compounds on the productivity of sows in production conditions, the relationship between subclinical mastitis, endometritis, preservation and weight gain of suckling piglets has been studied.

The result obtained, contributing to the solution of an important scientific problem: It consists in the creation and application of easy-to-manufacture and inexpensive, affordable means for the diagnosis, therapy and prevention of latent mastitis and postpartum endometritis, which helps to reduce the level of postpartum dysfunction of physiological processes and improve the reproductive qualities of pigs.

The theoretical significance lies in the development of basic principles for improving pig reproduction, implemented with mandatory consideration of optimal insemination intervals, therapy and prevention of subclinical mastitis and endometritis in association with the preservation of health and weight gain of piglets.

Practical significance. New, simple, cheap, economical methods and tools for the diagnosis, therapy and prevention of postpartum dysfunctions have been tested in production conditions. The diagnostic method does not violate the physiology of milk production in a sow, allows timely detection of pathology, taking appropriate measures and thus reducing losses in pig breeding. The proposed compounds contribute to the improvement of reproductive qualities, increase the effectiveness of prevention and therapy for postpartum dysfunctions of physiological processes, contribute to the rapid physiological recovery of the uterine livestock, reduce the incidence rate and increase the level of safety of suckling piglets.

Introduction of scientific results: the results obtained were implemented in the specialized pig breeding enterprise „Moldsuinhibrid" and are issued by acts №1-3 on the introduction of therapy and prevention schemes. Based on the research results, patent No. 2450268 „Method for diagnosing subclinical mastitis in sows" was obtained and practical recommendations „Diagnosis, therapy and prevention of subclinical mastitis in sows" were developed.

OSIPCIUC GALINA

THE REPRODUCTIVE POTENTIAL OF PIGS DEPENDING ON THE PHYSIOLOGICAL STATUS OF THE ORGANISM

165.01 - FIZIOLOGIA OMULUI ȘI ANIMALELOR

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