

Grand Harvest Research
— innovative company —



ArgumistinTM



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5 CORE COMPETENCIES OF THE COMPANY

Grand Harvest Research
— innovative company —



Development of innovative technologies.



Integration of the company's own research potential and the potentials of the scientific centers all over the world.



Creation of solutions to minimize the technological impact on the environment and human health.



Launch of products on the basis of the own production facility.



Collaboration with the partners to commercialize products.



FOR VETERINARY



FOR PLANT GROWING



**FOR WATER ECO-DISINFECTION
IN SWIMMING POOLS**

Argumistin® - veterinary innovation

Wide spectrum of bactericidal and bacteriostatic effects

The preparation contains particles of colloidal silver 10mcg/ml or 50mcg/ml and Miramistin 100mcg/ml

The unique combination of active ingredients leads to an increase in mutual antibacterial activity.



contains no antibiotics



causes no resistance



non-toxic

APPLICATION: CATTLE BREEDING

- prevention and treatment of acute and chronic endometritis of cows
- treatment of clinical and subclinical forms of mastitis of cows
- treatment of aseptic, infected and surgical wounds, excoriations, burns, ulcers and dermatitis



ACTION MECHANISM

Quaternary ammonium salt (QAS)

- loosens the cell membrane facilitating delivery of silver ions to the cell;
- enhances the silver effect;
- has a powerful bactericidal effect.

**More than 20 QAS were tested.
The best composition was chosen.**

SAFE APPLICATION

In accordance with GOST № 12.1.007-76 (the requirement of the Russian Federation National Standard) the degree of toxicity relates to IV hazard class (low-hazard substances).

Long-term intragastric application (for more than 10 days) of Argumistin® in a dose in 10 times exceeding the therapeutic dose demonstrates that the preparation:



- doesn't cause the death of the animals and doesn't have a negative effect on the general condition of the mice;
- doesn't cause statistically significant changes in the concentration of hemoglobin, in the number of erythrocytes, leukocytes, platelets;
- doesn't cause changes in content of total protein, albumin, urea, creatinine of mice blood serum;
- doesn't cause statistically significant changes in activity of such enzymes as alanine –(ALT) and aspartateaminotransferase (AST).

The study of the acute and chronic toxicity of Argumistin® were conducted in Siberia and the Far East Institute of Experimental Veterinary (Novosibirsk, Russia).





5 of 10 cows
got endometritis



3 of 10 cows
got mastitis

ENDOMETRITIS AND MASTITIS OF COWS

Endometritis and mastitis of cows result in:

- infertility of animals, premature culling
- decrease in milk productivity
- decline in the product quality
- multiple inconclusive insemination
- offspring shortfall
- high costs for maintenance and treatment of cows

**POSTPARTUM ENDOMETRITIS AND MASTITIS
CAUSE SIGNIFICANT ECONOMIC DAMAGE FOR
CATTLE BREEDING.**

TRADITIONAL METHODS OF COW ENDOMETRITIS AND MASTITIS TREATMENT



THE TRADITIONAL SCHEMES FOR THE THERAPY OF POSTPARTUM ENDOMETRITIS AND MASTITIS OF COWS RECOMMEND SYSTEMIC ANTIBIOTICS.

Disadvantages of antibiotics' application:

- in most cases a long-term culling of milk is needed
- antibiotics have a general negative impact on animals
- immunosuppression
- prolonged use causes resistance of the pathogenic microflora to the antibiotic

ARGUMISTIN® EFFICACY TESTS: THE TREATMENT OF COW POSTPARTUM ACUTE ENDOMETRITIS

3 groups of cows



Group 1

0.01% Argumistin® application dose is 70 ml. The preparation is used intrauterinely in 24 hours jointly with a hormonal medicine for uterine contractions.



Group 2

The complex antiseptic preparation application dose is 100 ml. The preparation contains a hormonal component for uterine contractions. The preparation is used intrauterinely in 48 hours.



Group 3

The cephalosporin antiseptic preparation of 4th generation application dose is 10 ml. The preparation is used by injection in 24 hours jointly with a hormonal medicine for uterine contractions.

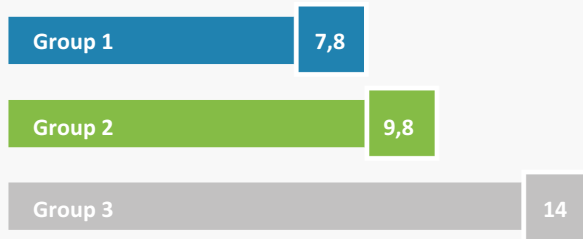
THE TESTS WERE CONDUCTED WITH THE ASSISTANCE OF 5 RUSSIAN BREEDING FACTORIES.

ARGUMISTIN® EFFICACY RESULTS IN THE TREATMENT OF COW POSTPARTUM ACUTE ENDOMETRITIS

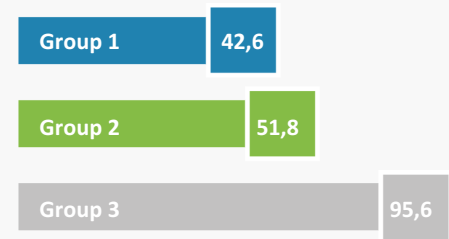
The application frequency
(the number of times)



The application period
(twenty-four hours)



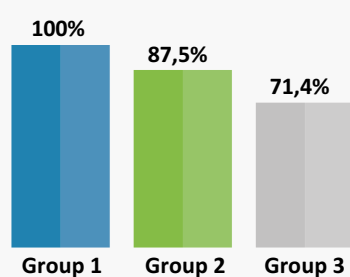
The service period
(twenty-four hours)



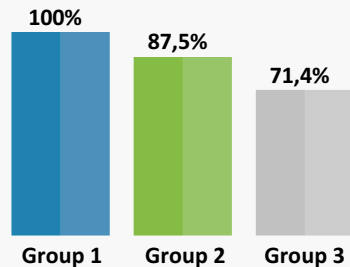
Average test results provided.

ARGUMISTIN® EFFICACY RESULTS IN THE TREATMENT OF COW POSTPARTUM ACUTE ENDOMETRITIS

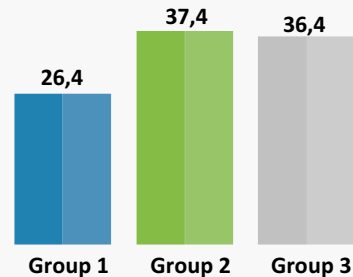
The effectiveness of treatment
(the number of cured cows, %)



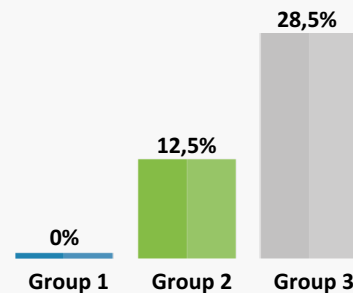
The number of animals to rut
(the number of cows, %)



The period from calving
to a rut period
(twenty-four hours)



The chronic endometritis cases
(the number of cows, %)



ARGUMISTIN® EFFICACY TESTS: THE TREATMENT OF COW CHRONIC ENDOMETRITIS

3 groups of cows



0.05% Argumistin® application dose is 70 ml. The preparation is used intrauterinely in 24 hours jointly with a hormonal medicine for cervical dilatation.



The complex antiseptic preparation application dose is 70 ml. The preparation contains a hormonal component for cervical dilatation. The preparation is used intrauterinely in 24 hours.

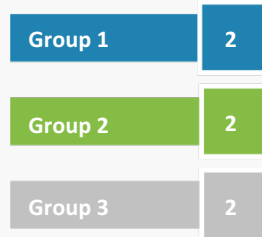


The cephalosporin antiseptic preparation of 1st generation application dose is 19 ml. The preparation is used intrauterinely in 24 hours jointly with a hormonal medicine for cervical dilatation.

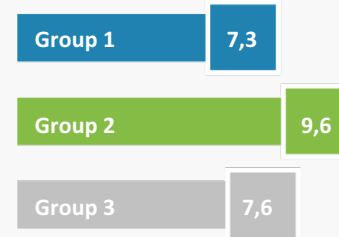
THE TESTS WERE CONDUCTED WITH THE ASSISTANCE OF 5 RUSSIAN BREEDING FACTORIES.

ARGUMISTIN® EFFICACY RESULTS IN THE TREATMENT OF COW CHRONIC ENDOMETRITIS

The application frequency
(the number of times)



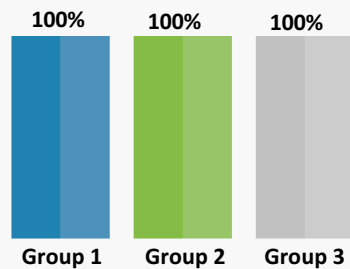
The application period
(twenty-four hours)



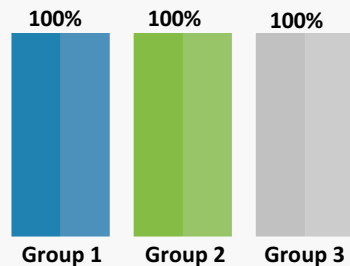
Average test results provided

ARGUMISTIN® EFFICACY RESULTS IN THE TREATMENT OF COW CHRONIC ENDOMETRITIS

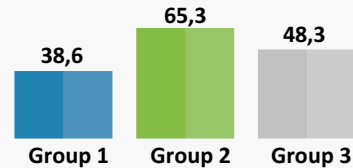
The effectiveness of treatment
(the number of cured cows, %)



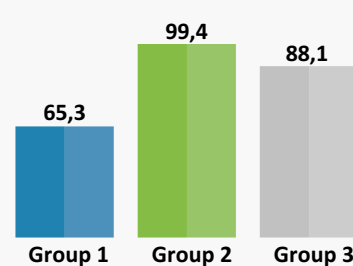
The number of animals to rut
(the number of cows, %)



The period from calving to a rut period
(twenty-four hours)



The service-period
(twenty-four hours)



ARGUMISTIN® EFFICACY TESTS: THE TREATMENT OF COW CLINICAL AND SUBCLINICAL MASTITIS

3 groups of cows



Group 1

0.05% Argumistin® application dose is 10 ml. The preparation is used intracisternally in 24 hours.



Group 2

The antibacterial sulfanilamide preparation application dose is 10 ml. The preparation is used intracisternally via a syringe in 24 hours.



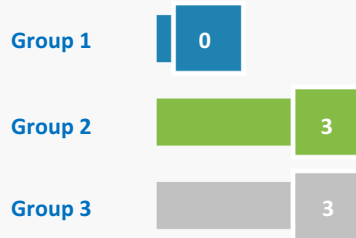
Group 3

The antiseptic penicillin preparation application dose is 10 ml. The preparation is used intracisternally via a syringe in 24 hours.

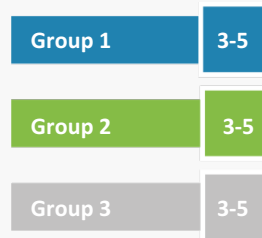
THE TESTS WERE CONDUCTED WITH THE ASSISTANCE OF 6 RUSSIAN BREEDING FACTORIES.

ARGUMISTIN® EFFICACY TESTS: THE TREATMENT OF COW CLINICAL MASTITIS

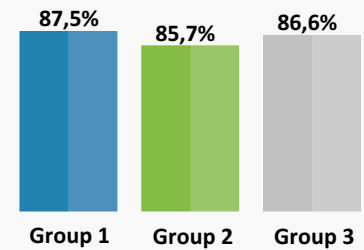
The milk culling period
(twenty-four hours)



The application period
(twenty-four hours)



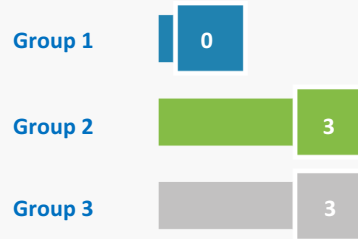
The effectiveness of treatment
(the number of cured cows,%)



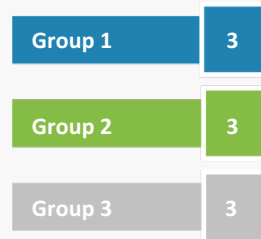
Average test results provided

ARGUMISTIN® EFFICACY RESULTS IN THE TREATMENT OF COW SUBCLINICAL MASTITIS

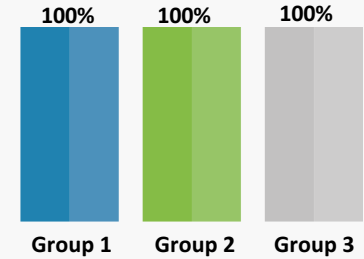
The milk culling period
(twenty-four hours)



The application period
(twenty-four hours)



The effectiveness of treatment
(the number of cured cows,%)



Average test results provided

ARGUMISTIN® ADVANTAGES IN THE TREATMENT OF COW ENDOMETRITIS AND MASTITIS



- High therapeutic efficacy of Argumistin® in the treatment of cow endometritis and mastitis
- No restrictions on the use of milk
- No adverse systemic effects on the cattle
- Pathogens and fungi are not able to gain preparation resistance to Argumistin®
- The preparation stimulates the regeneration processes of damaged areas of the mucous membranes of the animals
- preparation ensures a prolonged action as compared to short-term effect of many widely used antiseptics

Thank you for your attention!

Grand Harvest Research
— innovative company —

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