The effectiveness of the treatment of cows with mastitis

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Introduction

One of the most valuable food is milk. The main way to increase its production is the creation of healthy, highly productive herds. The concentration of livestock on large farms and complexes, the mechanization of basic production processes, including milking, revealed to the specialists a number of serious problems for the prevention of serious diseases. A special place in them are breast diseases, which significantly affect the productivity of animals, reduce the quality of milk.

Mastitis of cows causes significant damage to farms due to reduced milk quality and productivity of cows, including milk, udder, diagnostics, California test, Mastiet forte, ketoprof, klineksin 5%, vitamin of Helsivit. They were used subcutaneously – 6 ml once.

Getting a high-quality and safe cow milk is an actual task for dairy farms (Vasiliev, 2012; Verholomov, 2012; Larionov et al., 2012; Shepeleva, 2012; Rodionov et al., 2012; Rodionov et al., 2013; Chikina, 2013).

The genetic potential of the livestock of cattle herds, the quantity, balance and safety of the feed, housing conditions, milking technology and cow care have a complex effect on milk production and milk quality (Schukken et al., 1993; Zhelavskyi, 2018).
treatment costs, premature culling of cows (Hulps et al., 2010; Bagmanov, 2011; Kolchina et al., 2012).

According to foreign studies, subclinical mastitis is recorded in 90% of cases, whereas clinically significant inflammation occurs only in 3–10% (Bekken & Thorburn, 1985).

In the milk of cows with mastitis, there are significant physical and chemical changes, as a result of which it becomes a low-value food product and loses its technological properties during industrial processing. In addition, mammary gland inflammation leads to hypogalactia and, in some cases, to complete atrophy of the affected quarter of the udder. With subclinical mastitis, one udder lobe from each sick cow loses on average up to 10–15% of milk per lactation. Therefore, it is necessary to introduce into the milk production technology a complex of effective preventive measures to fight breast diseases in cows, in particular, mastitis (Krukowski, 2000; Malinowski, 2004).

For successful treatment of mastitis of cows, it is necessary to combine antimicrobial agents and biologically active substances. Such biologically active substances include vitamins, enzymes, hormones and micro elements, yeast, probiotics. These substances contribute to the normalization of metabolism in animals, activate the system of natural resistance, and thereby contribute to the normalization of metabolism in animals, activate the system of natural resistance, a nd thereby contribute to the system of natural resistance, thereby ensuring proper functions of damaged parts of the body and animal productivity.

The aim of this work was to study the therapeutic efficacy of the method of treating cows with subclinical and clinical mastitis.

**Materials and methods**

The cows of the farms of “Balke”, “Kalikhanuly” and “Madi-R” served as the material, where we conducted a study on subclinical and clinical forms of mastitis. 120 dairy cows of the black-and-motley breed at the age of 5–6 years with a body weight of 450–500 kg were used for research.

The diagnosis was established on the basis of the collection of anamnestic data, clinical and laboratory research results.

The quality control of the milk of cows was investigated by the California test and DEDM (Device for Express Diagnostic of Mastitis).

The express methods that we used allowed us to identify the subclinical and clinical forms of mastitis and timely treat it. Laboratory studies on the presence of somatic cells in milk were also conducted.

After the detection of mammary gland diseases, complex symptomatic treatment was performed.

**Results and discussion**

During the study of 120 cows, 53.3% of cases of subclinical form of mastitis were detected, and the clinical forms of mastitis were 12.4%.

In addition, laboratory tests were conducted for the presence of somatic cells in milk by the Laktan1-4 M apparatus and the California test. So, at the beginning of the experience, their number was determined within 590 thousand – 620 thousand, which is typical for subclinical mastitis. The data obtained as a result of the research are presented in table 1.

<table>
<thead>
<tr>
<th>Types of mastitis</th>
<th>Total number of cows</th>
<th>Number of sick cows</th>
<th>Sickness indicator (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subclinical Mastitis</td>
<td>64</td>
<td>53,3%</td>
<td></td>
</tr>
<tr>
<td>Catarrhal</td>
<td>120</td>
<td>8</td>
<td>6,6%</td>
</tr>
<tr>
<td>Purulent-catarrhal</td>
<td>7</td>
<td>5,8%</td>
<td></td>
</tr>
</tbody>
</table>

In order to determine the therapeutic efficacy of the drug, 64 cows, sick with subclinical mastitis, 8-catarrhal, 7-purulent-catarrhal mastitis were selected from three farms during the year.

For treatment, two schemes were used. For cows with catarrhal and purulent-catarrhal mastitis in the first scheme, Mastiet forte, ketoprof and vitamin of Khelsivit were used. And cows with subclinical mastitis were treated with mastitis forte and clinex 5%, with vitamin of Helsivit.
Table 2
A scheme of treatment of mastitis No. 1

<table>
<thead>
<tr>
<th>Name of the drug</th>
<th>Use</th>
<th>Dose</th>
<th>Days of treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastiet Forte</td>
<td>intracisternally</td>
<td>1 syringe dispenser</td>
<td>++ ++ ++ ++ ++</td>
</tr>
<tr>
<td>Ketoprof</td>
<td>intramuscularly</td>
<td>3 ml per 100 kg</td>
<td>+ + +</td>
</tr>
<tr>
<td>Vitamin of Helsivit</td>
<td>intramuscularly</td>
<td>6 ml</td>
<td>+</td>
</tr>
</tbody>
</table>

Mastiet forte was used intracisternally for five days at a dose of 10 ml 2 times a day for five days in a row. Mastiet Forte has a high therapeutic efficacy in subclinical and clinical forms of cow mastitis. After the drug was injected, a light massage of the affected quarter of the udder was performed to evenly distribute the drug in the lobe. And the drug ketoprof was also used. Ketoprof as an anti-inflammatory agent was used intramuscularly – 3 ml per 100 kg of animal weight 1 time per day for 3 days in a row. Klineksin 5%, as an antibacterial agent, was used intramuscularly at a dose of 1 ml per 50 kg of body weight 1 time per day for 3 days in a row. Antimicrobial agents and biologically active substances needed to be combined for successful therapy. Such biologically active substances include vitamin of Helsivit. Helsivit was used subcutaneously – 6 ml once.

Laboratory studies conducted in the apparatus “Laktan1-4M” for the presence of somatic cells in milk 3 days after the first treatment scheme were within 480 thousand, and in the second treatment scheme were 490 thousand somatic cells.

After five days after the last use of drugs, the results of the treatment were evaluated. The recovery of cows with subclinical and clinical forms of mastitis was again determined and the milk of all quarters of the udder was examined after 3–5 days by DEDM (Device for Express Diagnostic of Mastitis) and the California test. The cows were considered recovered if the milk sample showed a low content of somatic cells (up to 200,000 v1 cm³ of milk), there were no changes in the secret.

The effectiveness of the treatment of the first scheme was 93%, and in the second scheme was 95%. Thus, our research and complex treatment gave a very good result, not only in the treatment of these cows, but also prophylactic efficacy in the conducted research of the farms.

Therefore, the study of specific causes contributing to the occurrence of these diseases, their diagnosis, treatment and prevention are of great practical importance.

Table 3
A scheme of treatment of mastitis No. 2

<table>
<thead>
<tr>
<th>Name of the drug</th>
<th>Use</th>
<th>Dose</th>
<th>Days of treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastiet Forte</td>
<td>intracisternally</td>
<td>1 syringe dispenser</td>
<td>++ ++ ++ ++ ++</td>
</tr>
<tr>
<td>Klineksin 5%</td>
<td>intramuscularly</td>
<td>1 ml per 50 kg</td>
<td>+ + +</td>
</tr>
<tr>
<td>Vitamin of Helsivit</td>
<td>intramuscularly</td>
<td>6 ml</td>
<td>+</td>
</tr>
</tbody>
</table>

Conclusions

Drugs of the first and second schemes have a high therapeutic activity, which has reduced the time of treatment of subclinical and clinical mastitis, as well as the timing of culling milk. In both cases of the use of mastiet forte, there was not noted its negative effect on the general condition of the animals, local irritant or sensitizing effect of the drug. With the introduction of the drug in dairy tanks, the active ingredients penetrate the udder parenchyma, remaining in therapeutic concentrations for 12 hours.

References

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