RESEARCHES REGARDING THE PARAMETERS OF THE COW MILK QUALITY WHEN USING AN ANTISEPTIC SOLUTION FOR UDDER HYGIENE BEFORE MILKING

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Summary

The present study had in view the milk quality parameters in a cattle livestock nearby Bucharest, depending on some antiseptic solution for teat cleaning. There were analyzed the following parameters: temperature, acidity, density, antibiotics, total germs and somatic cells before and also after, using the antiseptic solution. The obtained results demonstrate real differences in milk quality when using this solution before milking. There might be concluded the following: microbial load of milk (TNG) decreased after using DESONET antiseptic solution; the obtained values permit to framing the milk in Premium quality class; the somatic cells, even their values are not over the standards, decreased after using DESONET antiseptic solution; the obtained results present the milk bacteriological quality in this unit and prove the efficiency of DESONET antiseptic solution use in milking biosecurity program.

Key words: teat, antiseptic, milk, cows

The milking management in a dairy cow farm aims to decrease the microbial load of the milk. The milk bacteriological contamination starts from the environment which indirectly reacts upon the udder and teats. A good milking hygiene and adequate milking technique are the key-points for obtaining good quality milk, with a low number of somatic cells. The focus of the present paper is to make a balance sheet by comparing certain results which could describe milk quality when using an antiseptic solution upon udder teat before milking.

Materials and methods

The study was carried out on mixed milk sampled from Holstein cows from S.C. Agroindustriala S.A. There must be emphasized the fact that the cows with mammary infections were not considered.

The pre-milking udder care was carried out conformingly the protocol in the unit, by washing with a jet pistol. After cleaning, the teats were immersed in some special cups with DESONET antiseptic solution.
Each teat was dried by a single-use paper towel and the first spurts were eliminated (are considered that have a high microbial load).

There were established the following quality parameters: temperature, acidity, density, antibiotics, total number of germs, somatic cells number before and after solution use. The methods are the usual ones in the special laboratories in the milk collecting and processing units.

**Results and discussions**

There were analyzed parameters regarding the total number of germs and the somatic cells number in mixed milk because they mark the bacteriological quality of milk.

In the table 1 there are presented the values from the analysis reports which reflect quality parameters of the milk mechanical collected in a herringbone milking system before using the antiseptic solution.

<table>
<thead>
<tr>
<th>Milk quality parameters (units of measurement)</th>
<th>Value</th>
<th>Quality classes</th>
<th>References values for Premium class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature (°C)</td>
<td>3</td>
<td>Premium</td>
<td>4</td>
</tr>
<tr>
<td>Acidity (°D)</td>
<td>16</td>
<td>Second quality</td>
<td>14-17</td>
</tr>
<tr>
<td>Density (kg/l)</td>
<td>1.029</td>
<td>Premium</td>
<td>1.029</td>
</tr>
<tr>
<td>Antibiotics (ppm)</td>
<td>Absent</td>
<td>Premium</td>
<td>Absent</td>
</tr>
<tr>
<td>Total number of germs – no./ml</td>
<td>360'000</td>
<td>Third quality</td>
<td>&lt; 50'000</td>
</tr>
<tr>
<td>Somatic cells – no./ml</td>
<td>80'000</td>
<td>Premium</td>
<td>&lt; 200'000</td>
</tr>
</tbody>
</table>

Analyzing the data in the table it may be noticed that the temperature, acidity, density and antibiotics traces are framed within the normal values.

The somatic cells, a major indicator of udder health recorded values below 200’000 – framing the milk in Premium class, this meaning very high quality. The low number of somatic cells also indicates that the analyzed milk specimens come from cows without mammary infections.

The total number of germs reveals the presence of a significant microbial load, these values being exceeded by 7.2 times beside the Premium class. This fact proves the major milking hygiene differences and framed milk within the third quality class.

The results of assessing the quality parameters of mixed milk after using the DESONET antiseptic solution are shown in table 2.
Table 2

<table>
<thead>
<tr>
<th>Milk quality parameters (units of measurement)</th>
<th>Value</th>
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<th>References values for Premium class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature (ºC)</td>
<td>4</td>
<td>Premium</td>
<td>4</td>
</tr>
<tr>
<td>Acidity (ºD)</td>
<td>14</td>
<td>Premium</td>
<td>14-17</td>
</tr>
<tr>
<td>Density (kg/l)</td>
<td>1,029</td>
<td>Premium</td>
<td>1,029</td>
</tr>
<tr>
<td>Antibiotics (ppm)</td>
<td>Absent</td>
<td>Premium</td>
<td>Absent</td>
</tr>
<tr>
<td>Total number of germs – no./ml</td>
<td>70’000</td>
<td>Premium</td>
<td>&lt; 50’000</td>
</tr>
<tr>
<td>Somatic cells – no./ml</td>
<td>49’000</td>
<td>Premium</td>
<td>&lt; 200’000</td>
</tr>
</tbody>
</table>

Analyzing the data in the table, it may conclude that also after applying the solution the quality parameters are within the normal values.

The somatic cells recorded values less than 200’000, but it is important to mention that their number is significant lower, which demonstrates the favorable influence of using the antiseptic solution for keeping the udder health.

There is also noticed an obvious decreasing of the total number of germs which demonstrates the diminishing of microbial load due to teats immersion into the antiseptic solution. The obtained value framed this milk within Premium quality class, with values below 50’000/ml for total number of germs.

Milk quality after hygiene protocol modification is shown in Chart 1.

Chart 1. Milk Quality parameters before and after using the antiseptic solution
Conclusions

1. Microbial load of milk (TNG) decreased after using DESONET antiseptic solution;
2. The obtained values permit to framing the milk in Premium quality class;
3. The somatic cells, even their values are not over the standards, decreased after using DESONET antiseptic solution;
4. The obtained results present the milk bacteriological quality in this unit and prove the efficiency of DESONET antiseptic solution use in milking biosecurity program.

References