Hygiene of Raw Milk from Austrian Spotted, Holstein and Romanian Spotted breeds, in Three Farms from Central Romania

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ABSTRACT
Analysis strictly medical, objective and impartial demonstrate that none of the foods considered to be basic, it is an ideal food, and milk can have some adverse effects on consumers, if the product is subject to changes caused by the improper welfare and health of the animals, but not least the processing technology. This study aimed the analyzing of raw cow milk related to the quality indicators on hygiene. There were considered the samples collected from three farms of the Central part of Romania, each of 24 samples of raw milk. The cows breed were farm A - Austrian spotted, farm B - Holstein and farm C - Romanian spotted. The parameters investigated here were total bacteria count and somatic cell count. The range of the non-conforming milk samples was 1:5.

Keywords: raw milk, total bacteria count, somatic cell count, Romanian farms.

INTRODUCTION
Milk represents a complex and easily digestible food, also called white blood, for their complete nutritional properties (Şteţca and Şuteu, 2010). Milk and dairy products increase the body's resistance to infection increasing the consumer health. Raw milk, as a raw material in dairy industry, is integrated in an European and global controlled system, where their price is established by financial institutions and controlled through entire business management.

Technological progress and economical development transformed milk and dairy products, along with other foods nowadays, in globally cargo traffic, with essential influence on all quality parameters.

AIMS AND OBJECTIVES
The research aimed the analyzing of raw milk hygiene in relation with two important quality parameters: total bacteria count (TBC) and somatic cell count (SCC).

MATERIALS AND METHODS
Milk was collected from three farms from the Central Part of Romania with three different types of cow breeds: farm A - Austrian spotted, farm B - Holstein and farm C - Romanian spotted. From each farm a number of 24 samples of raw milk were collected by trained personell. Samples were stored to freezing point until the moment of the analyze. Total bacteria count (TBC was determined with the equipment BactoScan FC (FOSS, Denmark). Somatic cell count was evaluated with Fossomatic™ FC (FOSS, Denmark) (Şteţca et al., 2014a,b), based on the flow cytometry. All the determinations were made in triplicate and the mean results were considered.

RESULTS AND DISCUSSION
Table 1 summarizes the results obtained for non-conforming samples, being out of the limit imposed by the Regulation, $10^5$ TBC / mL and $4 \times 10^5$ SCC / mL, respectively (REG. 853/2004, REG.1441/2007).
CONCLUSION
Samples classified as non-conforming represent 21% of the total analyzed samples. Most of the non-conforming samples were reported to farm C. In almost all cases, a SCS content above the limits was related to a TBC content as well, suggesting the improper farming, storing and delivery conditions.

REFERENCES

Tab. 1. Non-conforming milk samples provided from farm A, farm B and farm C regarding the TBC and SCC content in milk

<table>
<thead>
<tr>
<th>Samples source</th>
<th>Number of non-conforming samples</th>
<th>TBC / mL</th>
<th>SCC / mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm A</td>
<td>n = 2</td>
<td>*</td>
<td>4.6 x 10^5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*</td>
<td>4.3 x 10^5</td>
</tr>
<tr>
<td>Farm B</td>
<td>n = 2</td>
<td>1.4 x 10^5</td>
<td>4.2 x 10^5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.3 x 10^5</td>
<td>4.8 x 10^5</td>
</tr>
<tr>
<td>Farm C</td>
<td>n = 11</td>
<td>1.5 x 10^5...3.2 x 10^5</td>
<td>4.5 x 10^5...7.8 x 10^5</td>
</tr>
</tbody>
</table>

Note: * - values for TBC were in accordance with the European Regulation.

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