



ASPECTS REGARDING RAW MILK SAMPLE COLLECTING WITH THE PURPOSE OF PHYSICO-CHEMICAL AND MICROBIOLOGICAL ANALYZES

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Abstract: This paper presents milk sampling in order to provide a physico-chemical and microbiological analysis. It needs to be said that the milk is collected from specialized farms and collecting centres, the drivers transporting samples kept in a mini-fridge with which the tank vehicles is equipped. In the processing unit are taken once again samples from the milk compartments which are put under specific analysis according to the legislation in force. In this way it is avoided the processing of an infected milk with certain bacteria or degraded because the hygienic conditions and the recommended temperature for preservation were not respected. The analysis of the samples must be effectuated in laboratories which are certified by territorial DSVSA.

Keywords: milk, farms and collecting centres samples, processing units samples

1. INTRODUCTION

The raw milk coming from the collecting centres must meet a list of requirements, such as:

- to come from farms which are free of tuberculosis and undulant fever;
- to come from females which do not present any symptoms of communicable infection disease through milk;
- to have normal organoleptic characteristics (colour, taste, smell);
- to come from females which do not have any visible affections, affections of the genital or digestive apparatus (enteritis with diarrhoea and fever) or inflammation of the udder;
- to come from females who do not have wounds of the udder, which could affect the milk; not to come from females which have not be treated with medicinal substances, excepting the milk collected after the waiting period established according to the veterinary legislation in force.[3]

Raw milk is transferred from the farms or from the collecting centres to the central processing unit isothermal tank vehicles. The transport of milk from the producer to the fabric is made in the shortest amount of time possible in a way in which its quality is preserved. The way in which the transportation is made influences the time until the milk is processed and the quality of the finished products. The milk is collected from the producers once or twice a day (according to each milking), and the arrival of the milk in the farm should be rhythmic, correlated with the capacity of reception, pasteurisation and depositing.[2]

A sample is any product or material which goes under a microbiological examination. This is the reason why the sampling, the analysis and the keeping of the sample should be made with high responsibility by following all the requests of the actual institutional food service legislation. The sampling of each laboratory test is made according to the requirements of the sanitary veterinary standard. The identification of the sample is made through a method which assures the integrity and legibility of the information. The label of the samples should prevent their substitution, contamination or degradation.

The collected samples should be transported to the laboratory in the optimal time mentioned in the sanitary veterinary standard so there are no differences between the sampling date and the date of filling in the analysis request.

The equipment used in the food products sampling process in order to do the microbiological examination is: the individual protection equipment used by the one doing the sampling, sterilized samples and instruments used for the sampling and for sample transportation to the laboratory. The individual equipment used by the inspector

should be clean and to eliminate any risk of contamination of the samples. It includes: an overall, surgical gloves, facial mask, cap(capelin), shoe covers. [8]



Fig.1 Individual protection equipment for the sampling

2. MATERIALS AND METHODS

After the tank vehicles reach the processing unit, the receptionist takes, in the shortest time possible, each sample from each compartment (no matter the type), as such:

- The first sample is taken without agitation (figure 1) – this being necessary in order to establish the plate count.
- The second sample (figure 2) is taken after homogenization (this operation being done with the help of a mixer) in order to determine the physico-chemical analysis: pH adjustment, acidity, determining the antibiotic, aflatoxin, fat content, protein and lactose, but also SCC (somatic cell count).



Fig.2 Collecting samples before homogenisation



Fig.3 Collecting samples after homogenisation

The driver must show to the receptionist the delivery letter, the MRL and also the samples from the collecting centre in order to compare the results. These samples are kept in a mini fridge in the cabin of the tank vehicle. At the collecting centres the compartments of the tank vehicle are sealed, and they are unsealed by the receptionist at the factory, in order to take the samples.



Fig.4 Milk samples in the laboratory



Fig.5 Milk samples kept in the laboratory

The samples are taken in sterile glasses of 60ml, on which there are attached bar codes meant to make easier the identification of the analyses in the system. On the glass there is also written down the assortment and compartment number from which the samples would be taken.

The circuit of the samples from sampling to the laboratory



3. CONCLUSIONS:

1. Milk is a very easily perishable food product and that is why all the stages from collecting until processing in the specialized unit must avoid any possibility of infestation or degradation.
2. In order to keep the identity of the milk collected from the farms or from the collecting centres a sampling is needed when they are put into to isothermal vehicle and kept into mini fridges with which the vehicles are equipped.
3. In the processing unit a new sampling is taken from the milk transported in the separated compartments in terms of their provenience, after which in specialised laboratories the physico-chemical and microbiological parameters are determined.
4. After the analysis from the laboratory, the non-compliant milk is not kept and, in this way, it is prevented the processing of an infected milk.

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