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MILK TRANSPORT SYSTEMS TO PROCESSING UNITS

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Abstract: *Milk is a food used by the population of all age groups, both directly and in the form of a very wide range of dairy products. Being easily perishable and exposed to pathogens, it is imperative that the means of transport be approved by the Veterinary Directorate and technically meet the legal requirements for obtaining the Authorization.*
The means of transport shall be authorized on the basis of a specific dossier to be submitted to the Veterinary Office.
Keywords: *milk transport, milk transport systems, means of transport of milk*

1. INTRODUCTION

Food business operators responsible for the transport of raw milk have the following obligations:

- The transport of milk from the producer to the processing units must be carried out as soon as possible under conditions which ensure the preservation of the quality of the raw material;
- To transport raw milk cow's milk only with authorized means of transport sanitary-veterinary for this operation in the process of processing milk;
- To transport raw milk cow's milk only with isothermal means of transport, which ensures that the temperature is kept low throughout the transport, so that the milk does not exceed 10 ° C upon arrival in the processing unit;
- To transport raw milk cow's milk only with constructed and equipped transport means, so as to minimize the risk of contamination of milk;
- Develop and implement procedures for transporters, on milk control, respectively temperature verification, smell, color, identification of the presence of foreign bodies, before transferring milk from the cooling tank to the means of transport;
- To hold, throughout the transport, milk receipt documents for each supplier, producer and / or raw milk collection center;
- To have heat-insulating equipment for the preservation, during transport, of samples of raw milk taken for physico-chemical and microbiological analyzes in the processing unit's laboratory;
- To ensure the training of transporters on the reception and transport of raw milk to the laboratories for the processing, sampling and transport of milk samples in accordance with the delegated responsibilities and powers;
- After each shipment or after a series of shipment, when the time between discharge and subsequent charging is very short, but in all cases at least once a day, containers and tanks used for transporting raw milk must be properly cleaned and disinfected before re-use;
- Lifting of farm milk and collection centers takes place once or twice a day and the arrival of milk in the processing unit must be rhythmic, correlated with the ability to receive, pasteurize and store.

2. TECHNICAL REQUIREMENTS

Raw milk is transferred from a farm or collection center using isothermal tanks to processing units.

Foto 1

Tanks used for milk transport may have capacities ranging from 1000 ... 30000l, choosing the optimal variant based on economic considerations.
Tanks:

- are usually divided into two or three separate compartments (simultaneous transport of several milk qualities, possibly from several animal species);
- in some cases, filling of the tanks is by vacuum, which prevents the pump from being used and simplifying the pipes, which is a serious source of contamination of the milk.
- both the tank and its accessories must be constructed and installed in such a way as to allow easy and efficient washing.

Unlike the transport of milk in cans, the use of isothermal tanks has great advantages, namely:

- maintains almost constant milk temperature;
- simplifies work and reduces loading and unloading time;
- provides superior hygiene conditions;
- reducing milk losses by handling the cans.

The only disadvantage is that by introducing a small amount of contaminated milk into a tank, the entire contents are contaminated.
Once the tanker arrives at the processing center, the Service Receiver takes samples of milk in each compartment (regardless of assortment) as soon as possible, as follows:
The first sample is taken without stirring - this is necessary to determine the NTG (total number of germs).

Foto.2

The second sample is taken after homogenization to determine physicochemical analyzes: pH, acidity, determination of antibiotics, aflatoxin, fat, protein and lactose, but also NCS (total somatic cell count).

Foto. .3

Each driver has the obligation to present to the receiver the accompanying consignment note, CMR, as well as samples taken from the collection center for comparison of the results. These probes are stored in a mini-fridge located in the tank cabinAt the collection center, the tank compartments are sealed as they arrive at the factory and are unsealed by the receiver for sampling.

Foto.4

3. CONCLUSION

1. Being easily perishable and exposed to pathogens, it is imperative that the means of transport of milk be approved by the Veterinary Directorate.
2. The essential issue to be solved by the milk transporter is to ensure the hygiene of the transport compartments according to the sanitary veterinary norms, which are extremely serious in this case.
3. In the technological process of milk processing, the refrigeration system is absolutely indispensable given its perishability. For this reason, it is necessary to transport the milk only by means of isothermal transport, which ensures that the temperature is kept low throughout the transport so that the milk does not exceed 10 ° C upon arrival in the processing unit.
4.The means for transporting and handling milk must comply with the legislation in force, through construction, used materials, the way it is handled, and the qualification of the personnel.

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