

UE DIRECTIVE IMPLEMENTATION FOR THE ESTABLISHMENT TECHNOLOGICAL FLUX IN FOOD INDUSTRY

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Abstract

The adhesion of Romania to UE represents only a formal step. The difficulties will show up when we will try to follow the integration steps. That why at the food industries level it is imposed the significant change of the technologies legislation, marketing and specific management. This work presents two application of the European Council Directives stipulation in technological flux establishment in a milk factory and sweet - cake shop laboratory.

Keywords: *UE directive, milk factory, food industry*

Introduction

The adhesion of Romania to the UE it is a profound process, of long standing and of great amplitude. Theoretical, the new, represented by the modern technologies, innovating legislation etc. meets the old like customs, old-fashioned technologies, non-work, non-value etc. In this term, to the food industry level it has be changed conceptions, technologies, economical units improved, to make investments, managers and employees training. These are activities that take time, strategies and financial effort.

These extensive changes should be based on an adequate legislation grounded on the European Council Directives: 94/43/CEE, 80/778/CEE, 92/46/CEE, 96/23/CE etc. As a consequence of adhesion, the European Council Directives are transported in laws, government ordinances and decisions, orders of the ministries implied. As a consequence on the way of preparing Romania for adhesion showed up: the sanitary-veterinary law no. 75/1991 changed and completed through O.U.G no. 90/2000; the animal husbandry law no. 72/2002

regarding animals protection; low no. 7/1991 (completed), regarding products quality; the low of environment protection no. 137, changed and completed through O.U.G. 91/2002; OMAAP and OMS 83/90 from 13.02.2002/28.02.2002 to approve of standards regarding additive used in food products and material sources for their productions; OMAAP and OMS 84/91 from 13.02.2002/28.02.2002 to approve of standards regarding food contaminants; OMAAP and OMS 13085 from 13.02.2002/28.02.2002 to approve of standards regarding the analyze methods of some food products; OUG 97/2001 regarding production settlement, circulation and commercialization food, etc.

Technological Fluxes Project in Milk Factory

To achieve an investment in the milk processing field there were taken into account two different activities:

- the precursory activity of taking the decision which has the oneness character, it is realized with the propose of the established economical parameters;
- the post-decision activity proceeded with the purpose of detailing the objective conception and execution with preoccupation for economical efficiency improvement.

The projection, which takes place in both stages, involves a closer analyze of some possible reasonable variants, different technology, technical level, constructive solutions, arrangement and position, to can chose the optimum variant from technical-economical point of view (Pasat, 2005)

Because the pre-phesability and phesability studies should contain all the necessary elements to can take the decision regarding the investment achieve, it is imposed that all these should answer to the following questions:

- Which are the technological solutions for the achievement of the range of cheese take into account?
- Could be guaranteed the material conditions for the investment and production achieve (raw material, distribution area, land, ways, etc.)?
- Which are the technological-economical indicators for different

variants and which is the optimum variant from the technological-economical point of view?

- In what conditions and how much time could the investment be achieved and how the projected parameters can be reached?

For this it was analyzed the into-out fluxes, the milk collecting possibility in areas choice (Pasat, 2005) and the market analyze from the cheese field in Bucharest, the stores chain Cora, Metro, etc.

In accordance with the collected dates, on the technical-economical documentation and on the experience accumulated by the architect's staff the pre-phesability and phesability studies, respective the condition of contract where elaborated.

In the so-called projection phase of the processing unit are taken into account the technological parameters (milk quantity and quality, the collecting and transport capacity, the range of end products) and economical parameters (the raw material costs, the cost regarding the arrangement of the milk collecting and transportation, the milk processing costs, the delivering costs etc.).

The guarantee of the products quality achieved in the processing unit are related to the raw material quality, the specific technological fluxes, the equipments quality, the personal health, etc.

If it refers only to the technological fluxes specific to the milk processing units, we will notice the existence of the following fluxes (Banu, 2002; Pasat, 2003)

1. Milk collecting, transport and reception to the factory: The collecting, transport and reception milk will be made in concordance with sanitary-veterinary norms regarding the health conditions for the raw milk production and commercialization, for thermal treated milk and for the milk products, according with the MAAP no. 389 from 29 august 2002.

For this the Milk Collecting Center will be gifted with tanks that maintain the temperature of 4-6°C, tank from polycarbonate, storage spaces for the used vessels, washing and storage for the clean vessels.

The milk reception flux is diagrammatical restorable through the collecting cans way: entrance in the Milk Collecting Center, prelevation sample, cans discharge, temporary storage for the dirty cans, cans washing, and temporary storage for clean cans. Very

important is that the farmer meets this range only in the delivering milk cans phase and receiving clean cans on the collecting zone. He has the obligation that before use to clean them with warm water and to drain. After milking, he will close tight the collecting cans.

When the transporter car arrives is made a milk analyze which is delivered, through a sample prelevating from the storage tank. This analyze establishes the sample temperature. After checking up the sample it is coupled the connection hose which is maintained clean by protecting after washing in the factory through a protection muff. After milk discharge the hose is disconnected from the connection plug, the contact area is washed with warm water and the protection muff is put.

The collecting car has a maintenance reservoir thermal isolated. Through thermal isolation the reservoir producer guarantee the adequate protection, the milk suffering a warming process of max. 4°C/hour.

In normal condition of collecting the transport least between 30 and 60 minutes, that makes milk to arrive at the reception factory at max. 8-10°C. (Banu, 2002; Dairy Science and Technology, 2003)

The factory reception is made with adequate equipment (galactometer) and, in the same time with a fast analyzer of milk characteristics. The imposed demand is to have identical characteristics with those specified by the Collecting Center.

The transport car is moved to the cars parking for wash. Here it is taken by a qualified personal, connected to the CIP station of individual washing, following the adequate washing technology. Simultaneous is washed the outside of the care. After washing the collecting car it is put in the adequate space of parking (clean parking). From the environment protection point of view the washing area respect the industrial washing cycle of the interior, the installation being connected to the CIP station a factory and the outside wash, the area being presented with trickling to the septic tank, respective the sewerage installation.

2. The technological flux of milk processing contains the following operations: reception, filtration, temporary storage for processing, pasteurization, standardization, Telemea (brine cheese) and pressed cheese processing, mature, storage, packing end product and storage before delivery (Costin, 1965; Banu, 2002).

Supplementary states regarding technological fluxes refers to the following stage:

- the fungus and bacterium separation is made with conventional filters or bactofuga, before storing the milk for processing;
- milk standardization is made for the reason of using a standard milk with should assure a constant quality of finite products;
- when using sheep or goat milk, the technological flux supposes only the qualitative and quantitative reception, the pasteurization in the batch milk pasteurization, where is make coagulation. From this point the processing fluxes are the same.
- to respect the sanitary-veterinary norms is made the specify that the sheep milk processing, and goat as well is made on a period of time when the cow milk is not processed. The equipment, that have mutual utilization are washed after processing any kind of milk;
- the technological process of production and marketing plan are made in such a way that processing should be made once at 24 hour. This supposes that the processing type is daily: one day for Telemea, one day for pressed cheese. On the summer time the sheep or goat milk processing is made in the second change, which starts when the all equipment is washed.

3. The operating employees flux: Employees, which have access in the processing area, should follow the next into/out flux from the technological space. (Costin, 2003)

1. The access is made through the hall dedicated in scheme by factory (figure 1). In accordance with sex the personal pass in the reception cloakroom where they take off their street clothes, pass in the bathroom, which has shower and toilets, after which they pass in the cloakroom with the work clothes where they get dressed with the work and protection equipment. They into in production area through access hall.
2. The personal don't leave the production area on the working time. For current needs they use the inside WC, following the specific hygiene rules.
3. For meal pause taking there is an adequate space with a specific flux, which includes a WC. To assure the hygiene meal serving

- space and for the contact with the food, through the employing contract, the mandatory to assure the meal in catering system.
4. When finishing the work time the operating employee follows the entrances in flux the reversed way, so pass in the hall, then by sex go to the work clothes cloakroom; after taking of their clothes they get into the bathroom, follows the specific hygiene rules, after which they pass into the street clothes cloakroom. They leave the factory through the entrance hall.
 5. Through the interior order rules all the persons, including the staff or visitors follow the operating personal flux. For these persons are provided specific area and equipments.
 6. The individual work and protection equipments are changed daily or any time is necessary.
 7. The raw material milk analyses laboratory is provided with a wicket for reception the transport documents and for sample control. The operating way specific for these activities want permits the direct contact between the driver and the assayer.

4. The technological flux industrial washing: The equipments washing are made with the CIP installation with which the factory is provided. It is required the acquisition of CIP station with CE marking and technology. The washing liquid is of industrial type and respects the present's standards. The washing cycle is adequate with the CE norms, which will allow the requests fulfils for the food biosecurity. The washing liquids flux is well specified. The reception and storage are made in the special space of the CIP station, isolated from the sanitary point of view from the milk processing. Hoarding is made in special tank for this step. The washing station operator has the access forbidden into the milk processing area, only if it passes through the double filter zone. After washing cycle, used liquids are passed through the purification station. The specific used liquids flux, including those of washing should be authorized by Ministry of Environment and Waters Management (Costin, 2003; Pasat, 2003).

5. The hygiene material flux: The hygiene materials are buying from authorized suppliers in hygiene materials delivery specific for the public food and foods processing units. The disinfectant substances used in adequate concentrations should be only those approved by

Ministry of Public Health. These are stored in the special space. According with the necessities these are taken by the personal specialized in cleaning place. The specific packs are gathered before or after use and stored in the specific wastage-collecting place. The cleaning is realized at the end of working cycle. The equipments and materials used for the WC hygienization will be kept separately, in special space and well marked.

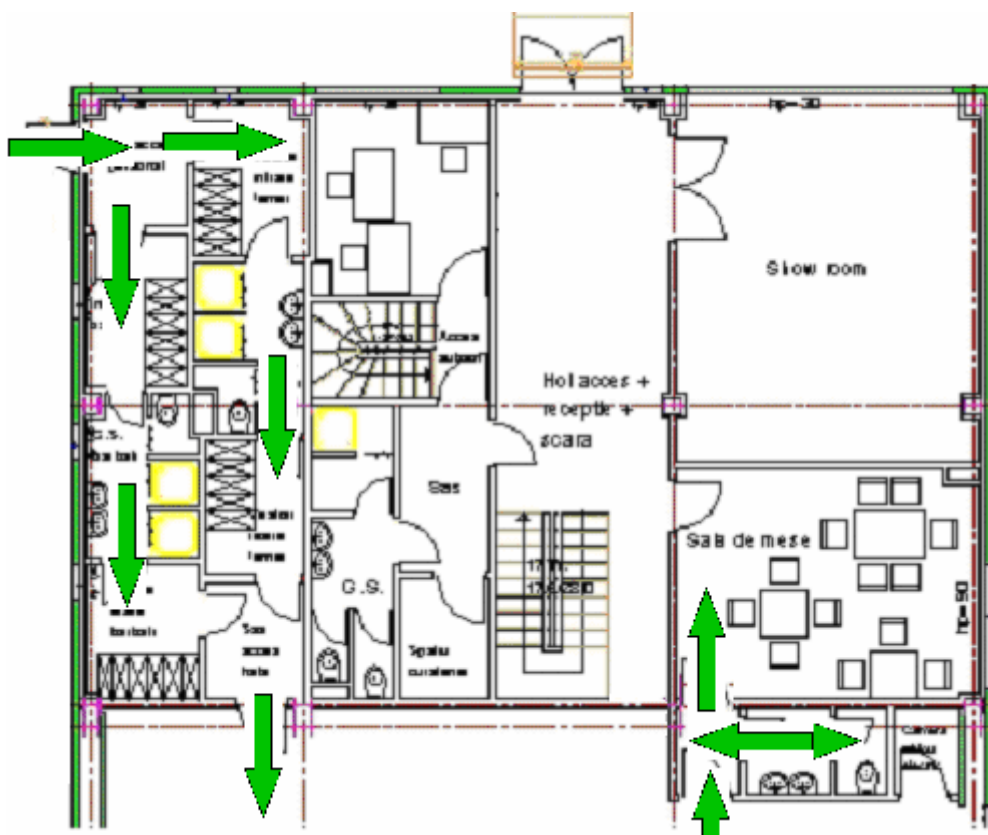


Figure 1. Personal fluxes plan.

The cleaning fluxes organization will be made according with the Ministry of Public Health Order no. 976/1998, art.24 and 25:

Art. 24 The food industry units are mandatory:

- a) to have caretaker employer, who has the duty to keep the factory and sanitary group cleaning, as well as personal which has the duty to maintains the rooms in which takes place the technological process clean;
- b) to assure to this carrying personal protection equipment of different color then that of sanitary protection equipment.

The maintaining and hygiene continuous operations will be made according with an annual plan approval by the Public Health Inspectorate. Through the internal order regulations is forbidden to clean in the milk processing time.

6. The finite products pack flux: The finite products packing are made in specific packs, in the special space (figure 2). The Telemea and pressed cheese flinders packed in vacuum and thermo-welded foil. Basic package are bought from authorized suppliers, and will be for food use and bio-degrading. After acquisition these are stored in the special space from the Package Storehouse. The packing machine and packing technology will be in accordance with the standards, because the company will buy these from a UE country. The packing machine feed is made by the personal that passed through the double filter. The flinders packed in foil are stored in cardboard box. These are stored in the Packs Store and are made in the special space for packing. The finite products packed have different fluxes according with the finite product type, on product group and processing days.

7. Products labeling: The complex technological flux of the factory will make the HACCP and ISO 9001 implemented object. The end products labeling is made according with these norms. The labels content, their shape, the sitting place, the circuit label from the acquisition until application are settle the according with the existent norms.

8. The reused packs flux: If it is chose the products delivery of Telemea cheese type in box from polymeric materials and these are taken by the finite product delivery machine. When it arrives to the factory the car stops at the Reusing Packs storehouse entrance where these packs are unload. The specialized operator for washing, which

has a specific rule for entrance in the washing area, takes these. After washing the packs are stored by packs type in the Washing Pack Storehouse. The same rule is applied in case of new pack.

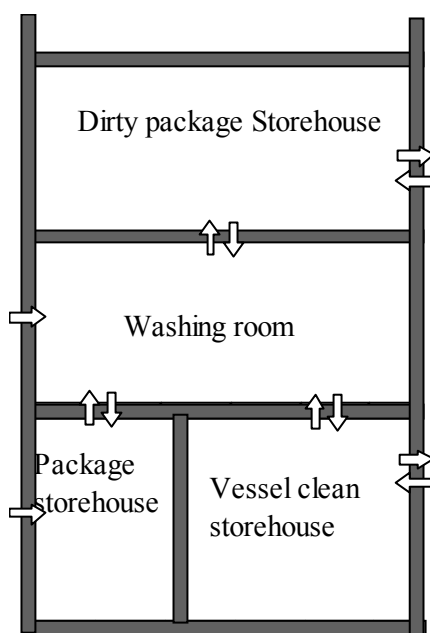


Figure 2. The packs washing flux

Conclusions

The right utilization of the principles contains in actual legislation regarding the milk processing specific fluxes, in relation with some phezabilty plan elaborated permitted to obtain the project eligible in concordance with SAPARD requirements.

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