

## **HACCP COMPLIANCE RESEARCH ON MARKETING IN UNITS OF MILK AND MILK PRODUCTS, IN BIHOR CUNTY**

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### **Abstract**

*Under national law - preparation, processing, manufacturing, packaging, storage, transport, distribution, handling, marketing directly to consumption, that the consumer contact with the product, must take place in hygienic conditions, that does not affect in any way the consumer. Quality products and marketing services is the main factor in the success of the competition. The success of the advertising market is noted as produced by repeated buying of some / a product / product, no complaints and not least the large number of buyers-participants. As a general rule, food should be described or presented in a manner to ensure that the milk product term is reserved for milk and dairy products, protect consumers from the risk of confusion or error and ensure fair trade practices.*

*Product name must be declared under Section 4.1 of the Codex's general rules for the labeling of prepackaged foods (CODEX STAN 1-1985, revised 1-1999, Codex Alimentarius, vol 1A.).*

*Temperature 'space marketing' must conform domestic and international legal requirements. The term of validity of the product, in close correlation with the conditions of storage and marketing, must be drawn up that provided on the packaging.*

**Key words:** milk quality, food safety, ISO standards, hygiene requirements, commercial units

### **INTRODUCTION**

In this paper, I did research on the identification of critical control points in the commercial units are being HACCP and ISO 9001:2008 certification, which aims at marketing of milk and milk products and others.

In order that the requirements of hygiene are necessary and mandatory compliance with current legislation, but compliance with HACCP requirements and standards for quality products and services.

This paper aims at evaluation of standards and requirements stipulated in HACCP and ISO 9001:2008 quality products and services, in units of trading milk and dairy products. Also, in this paper I proposed by the marketing units, to evaluate and possible risks that may occur when they are not complied with the preservation and storage compliance "refrigeration chain" provided on product labels.

For breaches of these procedures strictly storage and marketing of products, product line that meets all the requirements of ISO 9001 for quality products and services, but standard requirements of ISO 22000 food

safety, these products can become inconsistent and dangerous for consumers.

Based surveys to We conducted from February to April 2009, individual producers and the commercial units located both in rural and urban. Also, the research part of his thesis.

## **MATERIAL AND METHODS**

Material and methods used in research are undertaken in close correlation with the procedures stipulated in the HACCP standard ISO 9001:2008. The principles, procedures and steps for implementing corrective actions are put into practice. The fulfillment of the context of these principles and procedures, depend primarily the knowledge of specific hygiene rules for each section, the application of the technological flow of production, processing and marketing of milk and milk products.

In network marketing milk and dairy products that require mandatory methods are:

- a) - check the legality of commercial operation of unit;
- b) - verification of strict hygiene conditions in storage facilities;
- c) - Checking for removal contracts with companies, disinfection and pest;
- d) - inspection of the labeling of milk and milk products;
- e) - check the date and the valid period, the verification specification batch, check the nutritional label and the energy and nutrients;
- f) - verification of compliance conditions of transport, storage and exposure to marketing of milk and milk products.

I watched every unit in an existing freezer space in the first phase in the sense of quality equipment and officials.

I watched if the existing cold stores are equipped with thermometers, and if they work in specific parameters specified in the technical book of space and equipment retail cabinets in each unit.

## **RESULTS AND DISCUSSION**

Assessments, research and the measures taken in this presentation refers to 25 units of trading milk and dairy products as follows:

- A. - 10 units located in urban marketing;
- B. - 10 units located in rural trading;
- C. - 5 individual producers that sell milk and milk products in food markets.

To keep the data and safety rules on the location, but also for an interpretation of the results more readable and logic, units throughout the paper presentation will be named:

- urban U1, U2 ,..... U10
- rural R1, R2, ..... R10
- individual producers P1, P2, .... P5.

Following research conducted in 25 units of trading milk and dairy products in Bihor County, I watched and assessed compliance with the reception and storage products to exposure to cold windows.

In these evaluations we took into account the state of packaging in the regards sealing integrity, framing in the net quantity and net volume said.

a). In the assessment and verification of the legality of the operation of commercial units have found: - urban, we identified:

- 2 units (U2 and U7) were not sanitary-veterinary authorization for marketing of milk and milk products, and one unit was not operating authorization approved at days;

- 2 units in rural areas (R3 and R5) had endorsed the authorization to operate day and 2 units (R8 and R10) had no sanitary-veterinary authorization approved at days (*Table 1*).

The establishment in question are were given advice on the submission of documentation and obtaining the legal documents of hours.

Markets in milk and milk products (in number 2) in which the 5 producers sell their milk and milk products are allowed and are equipped with refrigerated showcases in finding work as legal norms.

*Table 1*

*Identifying non-conformities on the legality of the operation units*

<b>Unit number investigated</b>	<b>Data</b>	<b>Identifying nonconformities</b>	<b>Remedies</b>	<b>Observations</b>
U2	12. 02. 2009	- Sanitary-veterinary authorization does not present	- Consulting for filing documentation for obtaining authorization	- Lack of ignorance of the principles and legal regulations
U7	12. 02. 2009	- Sanitary-veterinary authorization does not present - not operating authorization approved at present days	- Consulting for filing documentation for authorization	- Lack of ignorance of the principles and legal regulations
R3	13. 02. 2009	- not operating authorization approved at present days	Consulting	- Lack of ignorance of the principles and legal regulations
R5	13. 02. 2009	- not operating authorization approved at present days	Consulting	- Lack of ignorance of the principles and legal regulations
R8	16. 02. 2009	- not present sanitary-veterinary authorization approved at days	Consulting	- Lack of ignorance of the principles and legal regulations
R10	16. 02. 2009	- not present sanitary-veterinary authorization approved at days	Consulting	- Lack of ignorance of the principles and legal regulations

B. The quality of food can not be separated from food safety, in that coverage within the legal and regulatory requirements in order to protect the consumer. Similarly it is difficult to separate the food safety of the general rules, specific occupational safety (the former / safety). All actions on health and safety line are related to the food hygiene and obvious common sense actions that washing hands , good food practices. Before the implementation of HACCP should be observed:

- Code of Practice for hygiene-GHP;
- Code of Practice-GMP production
- Requirements for food safety.

Is said that in fact the first link of the food chain should be family, school, because the " the seven years from home "in personal hygiene are" common sense "common that you must have each employee food. Later is too late as many degrees of interest (culture, civilization is what becomes no diploma). As to the manner of presentation and hygiene and health conditions of storage and sale and we consider these issues:

- a) - periodic evaluation hygiene storage space;
- b) - periodic evaluation of the temperature of storage space;
- c) - periodic evaluation of hygiene and protective equipment to employees who participate in operations and that direct contact with food;
- d) - to assess the degree of cleaning of vehicles carrying food for storage;
- e) - assessing the quality of packaging products for the modification of form, if an appropriate manipulation of the unit producing up to the entrance of the unit storage space marketing.

After evaluations undertaken on the presentation and hygiene and health conditions of storage and sale in the 25 units taken into account, we obtained the following results (*Table 2*).

Of the 25 units - 10 units does not fully complied with the rules of hygiene, namely:

- 2 units in rural areas, the seller does not present adequate equipment, that robe and headgear. All these units, refrigeration showcase milk and milk products were placed together with meat, sausage and smoked that;

- in 2 rural marketing unit, had no running water in the unit and storage space

- to 3 units was necessary to replace the equipment cabinet freezer thermometer, because they have been assessed not function properly undertaken that does not show the actual temperature compared with a standard measuring device;

- 3 of the 5 individual producers did not meet hygiene requirements and not using adequate protection equipment;

- to 8 commercial units, employees did not know all the rules of hygiene and their motivation. They were not aware of the rules and requirements

have to packaging products to the reception in the storage space behind the carriage. The units in which irregularities were recorded on milk and milk products showcase refrigeration were placed together with meat, sausage and smoked meat that have been implemented corrective measures, namely: the operator was forced to choose between milk and dairy products or meat and meat products to purchase a refrigerated showcases in which to be presented only one of them. Also traders were forced to buy urgent protective equipment. The units that in space no water storage, corrective measures were applied, namely: merchants were notified that it is forbidden to store food milk and reception that follows to do the distributors to represent only the maximum that can be presented in the showcase cooler, thus ensuring continuity of freshness of milk and milk products. The units that were defective thermometers were applied corrective measures, namely: they were asked their dealer replacement, replacement was performed in primary stage of evaluation. In units where employees did not know all the rules of hygiene, transport, handling and storage have been implemented corrective measures, namely: it was to know all these rules were drawn up and records with tables nominal aware of taking on by them and otherwise non-compliance of these measures employees have agreed to bear any criticism or measures taken by the employer. Failure to comply with hygiene standards on production, processing, storage, preservation, transportation and sale of food rise to civil liability, offense and, if necessary, of persons those responsible.

C. Internal Law no. 316 of 28.06.2004 - Art 23. b and c - is a contravention and is punishable:

- b) transportation, storage or display of food as raw materials or semi-finished products together, which is consumed without heat treatment and without ensuring appropriate conditions for each category;

- c) failure by the head of food, the daily duty of checking the status personal hygiene and health staff, as well as receiving the unit, employees of convalescent patients or diseases, a result of research and evaluation, we recorded the following: - of 25 units taken into account both rural urban and only 3 units (urban) had contracts DDD (disinfection, pest, rat extermination). After these findings were taken corrective measures on knowledge of issues serious consumer health, the disclosure of the legal representative of the marketing units, the existing legal rules, and contraventions and penalties for infringement.

All representatives marketing units of milk and milk products have taken corrective measures by contracting firms profile and awareness of the dangers that may be subject to the consumer.

D. On all commercial units taken in the analysis were assessed and verified all information provided on product labels, namely: product name,

company name and address of producing or importing distributor in our country legally (if imported products), labeling, expressed net quantity, batch number, validity and date of production of goods, storage, etc..

After the evaluations have found that the commercial units in the rural and urban milk products such as milk and packaged specifications had presented all the labels.

The food markets were samples of the products submitted for marketing of individual producers, in order to perform analysis to determine: organoleptic examination, physical-chemical and microbiological testing of milk and milk products, and other analysis on forgery detection milk.

Presentation number of samples, and present analysis and results will be presented in Part II of the paper.

Table 2

Identifying non-conformities on hygiene in storage spaces

Unit number investigated	Data	Identifying nonconformities	Remedies	Observations
R4	19. 02. 2009	- Lacked adequate equipment (gown, caps); -present in the window so cold milk and dairy products and meat products, smoked	- Consultancy HACCP and ISO 9001:2008	- Lack of ignorance of the principles and norms of HACCP and ISO 9001:2008
R8	19. 02. 2009	- Lacked adequate equipment (gown, caps); -present in the window so cold milk and dairy products and meat products, smoked	- Consultancy HACCP and ISO 9001:2008	- Lack of ignorance of the principles and norms of HACCP and ISO 9001:2008
R2	23. 02. 2009	- Absence of current water storage space and commercial space	- Consultancy HACCP and ISO 9001:2008	- Lack of ignorance of the principles and legal regulations and standards HACCP and ISO 9001:2008
R3	23. 02. 2009	- Absence of current water storage space and commercial space	- Consultancy HACCP and ISO 9001:2008	- Lack of ignorance of the principles and legal regulations and standards HACCP and ISO 9001:2008
U1	25. 02. 2009	- Broken to showcase refrigerator thermometer	- Consultancy HACCP and ISO 9001:2008	- Lack of ignorance of the principles and legal regulations
U5	25. 02. 2009	- Broken thermometer in storage	- Consultancy HACCP and ISO 9001:2008	- Lack of ignorance of the principles and legal regulations
U9	25. 02. 2009	- Broken to showcase refrigerator thermometer	- Consultancy HACCP and ISO 9001:2008	- Lack of ignorance of the principles and legal regulations
P1	27. 02. 2009	- Broken thermometer in the store, they had no proper equipment (gown, caps);	- Consultancy HACCP and ISO 9001:2008	- Lack of ignorance of the principles and legal regulations
P3	27. 02. 2009	- Broken thermometer in storage	- Consultancy HACCP and ISO 9001:2008	- Lack of ignorance of the principles and legal regulations
P5	27. 02. 2009	- Broken thermometer in the store, they had no proper equipment (gown, caps)	- Consultancy HACCP and ISO 9001:2008	- Lack of ignorance of the principles and legal regulations

E. Verification of date of manufacture and period of validity from the researches we recorded the following results: in the 25 units considered were registered products with expiry period, displayed in display cabinets in 4 units in rural areas and 2 units in urban areas.

The individual producers that sell milk and milk products in food markets, products have proven to be fresh, because the supply is made daily.

On the nutrition and energy value, all product labels contain specific information and properly checked cast. Nutritional information is related to 100 g product and energy intake is expressed kJ or kcal / 100 g product.

Corrective actions in order to eliminate such nonconformities refers to contact operators for the immediate withdrawal of the marketing and consumption.

F. Verification of compliance with conditions of transport, storage and exposure to marketing of milk and milk products.

According to laws in both domestic and international force that must be followed in Romania, breast milk and milk products obtained by industrial units or only unwind and special districts authorized (*Apostu Sorin - Food Quality Management*).

Besides the general conditions of hygiene, these units must meet the following conditions: to be equipped with refrigerated spaces equipped with thermometers, respect of validity stated on the packaging and labeling, transporting milk and milk products will be so wholesome and compliance product is not affected, the use of packaging that does not allow contamination or degradation products.

Cheese during transportation will be packed in paper, cardboard or synthetic foils, placed in boxes or crates of material software which should ensure the integrity and wholesomeness of products. Butter will carry packed in absorbent paper or foil, tubes or blocks placed in packages in cardboard boxes or crates to withstand transport.

If carried exceeds 6 o'clock it should be provided with its own cooling isotherm, so that internal temperature does not exceed 15 °C. Vehicles that transport makes milk and milk products must be in advance washed and disinfected, the certification roadmap.

Direct responsibility for correct loading of products, clean vehicles and removal of this document, is the leader of the means of transport.

After studies in the units taken in the study we recorded the following results:

- in all units of trading milk and dairy products, transport is achieved by means that meet all legal veterinary, and all the standard requirements
- all units of trading milk and dairy products, the conditions of storage and marketing exposure to cold windows, following the necessary corrective applications

- food markets, taking into account that were All meals and replace old windows with windows stores in November, there were no recorded negative results.

## CONCLUSIONS

HACCP compliance and international standards, in units of trading milk and dairy products, is a special importance to the consumer. Failure conditions, principles and regulations on quality products and services from obtaining raw materials to obtain the finished product can generate a series of epidemiological disease transmission risk of infectious diseases consumer.

It also prohibits violation Law 363/2007 on combating unfair practices of traders in the relationship with consumers and harmonizing regulations with European legislation on consumer protection. Conditions for production, storage, transport and recovery of milk and milk-based products are regulatory MAAP Order 389/2002 for approving veterinary Rule on health conditions for production and marketing of raw milk, milk and heat-treated milk-based products published in the Official Gazette no. 860/28.11.2002. Products mentioned offered for sale can not be recovered in food markets until we have verified both by the official veterinarian of sanitation products and accompanying documents. Disposal of these perishable products can not be easy unless the insurance markets by the administration of special places with all facilities necessary.

National Sanitary Veterinary Agency has established a policy in this area that contains assessment units, drafting of the restructuring programs, to establish the parameters cronogramme to amend construction, flow and technology. For units not restructuring program and not in compliance with EU hygiene requirements, to be revalued to work only on the domestic market provided the rules hygiene. The work of those who do not meet these requirements will be suspended under the regulations in force. Following research conducted in the units presented in this paper, we found that not all units of trading milk and dairy products does not fully complied with the general rules of hygiene. Also not all traders are aware of the seriousness of the problems that may occur if non-compliance. The units in which are implemented HACCP or international reference standards, therefore there is even minimal scrutiny, are ironed hygiene seriously all the marketing of milk and milk products. The reception by the merchants products we recorded the following drawbacks:

- not made a reception quality of the operators;
- is not verifying the documents accompanying the analysis report, certified quality Durability;
- not all products are kept in conditions of temperature, humidity, etc.



- are observed duration and temperature of storage-storage registering microbial load beyond permissible;
- presence and absence infunctionabile thermometers is that not all products stored determined by the manufacturer and in turn altering and depreciation of products;
- in all units of trading milk and dairy products do not know all the working procedures existing standard strictly for this chapter;
- the legal representatives of the food marketing units are not sensitized by state authorities, to verify them, to know and comply with requirements imposed by them, especially news that appear in the field, as it always is provide counseling or advice during inspections. Findings and issues highlighted have been assessed and presented in this paper are not present unfortunately only in those locations, it is a national issue. Division of milk production and dairy products at present, difficulties arising from the issue price of the acquisition, compared with the cold period, on the sidelines and, parallel, reduced volumes of collected raw materials required by processors, the other.

HACCP compliance but also present in the ISO 9001:2008 standards for products and services quality and ISO 22000 on food safety can may constitute basis for the production line, that does not affect consumers' health. Quality Management Systems (CMS) aimed at all stakeholders in the results and performance of an organization, currently has a meaning and importance of an increasingly high. The design of these systems, based on their development objectives and consistent, is the thorough knowledge, current and practical experience of company personnel. It is important that this knowledge, and skills of employees, to be used and developed, the competitive success factors for creating added value to the entire unit.

The HACCP (food safety and hygiene) is open to all participants on stage by food business operators in the European Union. Here, in Romania, legislation relating to safety and food hygiene shows this:

- Law no. 150 of May 14, 2004, the law on food safety,
- Decree no. 308 of May 13, 2004, Decree to promulgate the law on food safety;
- Law no. 412 of October 18, 2004, the Law amending and supplementing Law no. 150 / 2004 on food safety,
- Decree no. 782 of October 15, 2004, Decree on the promulgation of the Law amending and supplementing Law no. 150 / 2004 on food safety
- GD no. 924 of August 11, 2005, decision approving the general rules for food hygiene.

For this category of commercial units is recommended following aspects:

1. - Respect the rules and legal provisions;
2. - Application of HACCP rules and standard procedures;

3. - Checking all documents submitted and available on the origin and quality, the acceptance of, the state of packaging and sealing integrity, date, sustainability minimum consumption, batch, and how storage and storage;

4. - To prevent contamination of food by people coming into contact directly or indirectly, should be considered maintaining a high level of personal hygiene and proper behavior reception procedures and hygiene;

5. - The establishment of marketing of milk and milk products in food stores are finished and recommend mandatory protective equipment health of employees so as not to affect product conformity;

6. - It pays special attention to the container;

7. - Waste resulting from cleaning of premises, packaging and packing materials, deformed by handling defective products must be conducted with great responsibility.

If the national and international level will require the placing of dairy products the highest quality that meet all requirements, international trading rules and procedures will get the best quality products. Since the storage and distribution are becoming increasingly competitive, some units for milk production and milk products, try to add value and quality of these products trying to gain new customers. Transport, storage and handling costs, consumer preferences and other business issues will require better quality products with lower cost milk marketing. So, production of better quality of milk would be expected from the international dairy industry, wherever in the world where products are sold or used.

## REFERENCES

1. National Authority for Sanitary Veterinary and Food Safety - cooperation agreement in November 20, 1992 between the Office for Consumer Protection and general veterinary - PGC 01.08.00.92 - Published in the Official Gazette, Part I no. 39 of February 23, 1993;
2. National Authority for Sanitary Veterinary and Food Safety - Law no. 62 of 24 April 2000 approving Government Emergency Ordinance no. Law 42/1999 for expanding veterinary no. 60/1974 Published in the Official Gazette, Part I no. 185 of April 28, 2000;
3. Law no. 608 of October 31, 2001 compliance assessment products published in the Journal, Part I no. 712 of November 8, 2001;
4. Apostu Sorin, Mihaela Anca Rotar - practical food microbiology, Publisher Risoprint, Cluj-Napoca 2002;
5. Apostu Sorin - Food Quality Management, Publisher Risoprint, Cluj-Napoca 2004;
6. Bara Vasile s.a. – General methods of practical microbiology, Publisher University of Oradea, 2000, ISBN 973-8083-19-2;
7. Barzoi D., Apostu Sorin - Food Microbiology, Publisher Risoprint, Cluj-Napoca 2002;
8. Cornelia Tont (Cociuba), Camelia Bara, Carmen Ionescu - 2001, Microbiology and quality control of milk and milk products, University of Oradea ISBN 973-8219-46-9;
9. Cociuba Cornelia - Methods of preserving food from animals, University of Oradea Publishing House, 2003, ISBN 973-8219-46-9;
10. ISO 9001:2008 quality products and services. Requirements;