

PECULIARITIES OF THE SELF-CONTROL PROGRAM IN A POULTRY CUTTING PLANT

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Summary

Food products may cause sicknesses to the consumers either due to infringing the sanitary –hygienic norms, or by violating the manufacturing technologies applied to obtain the raw material and the final product. The illnesses that are caused by infections from the food products are an international problem and they may be expressed clinically in different ways, with various symptoms, from less aggressive clinical signs, up to very severe signs that might even lead to death.

In view of obtaining safe and good quality food, at an acceptable price and able to provide a correct nutrition, it was necessary to conceive and to apply adequate programs which are able to control food. The control of the food products contributes to the consumers' state of health, by commercializing safe aliments. Food safety is a health problem for the producer, consumer and government organisms.

The international, European and national sanitary veterinary legislation, regarding the manufacturing of foods, requires the application of the HACCP self-control system in food products reception units, in storing units, as well as in the processing and commercializing units of aliments.

The quality and safety of food products are subjects of a major importance and are followed up with utmost attention by the constituted organisms in view of protecting consumers' health. In order to promote safe food products commerce, certain self-control programs, such as SSOP, GMP, HACCP, have been introduced in manufacturing units.

Materials and methods

Regulation (CE) no. 852/2004 of the European Parliament and of the Council, dated 29.04.2004, regarding the hygiene of the food products, establishes the general hygiene norms for food business operators, taking into consideration mainly the following principles:

- the main responsibility for the safety of the food goes to the food business operator;
- it is necessary that food safety is applied within the whole food chain, starting with the primary production;

- it is important to maintain the thermal chain, especially for foods that can not be stored at the environmental temperature, especially the frozen food;

- the general implementation of the procedures based on the principles HACCP, along with the use of some good practices of hygiene, have to increase the responsibility of the food business operator (FBO);

- the guidelines of a good practice represent a precious instrument for the FBO at each stage of the food chain to respect the hygiene regulations and to apply HACCP principles;

- it is necessary to establish the microbiological criteria and the control requirements of temperature, based on scientific evaluation of risks;

The FBOs have to make sure that all manufacturing stages, processing and distribution of food products that are under their control, follow the legal sanitary veterinary requirements and that all the units observe the general sanitary requirements provided by regulation no. 852/2004, as well as all specific requirements foreseen in regulation (CE) no. 853/2004.

The FBOs apply, according to each situation, the following specific sanitary measures:

1. respect the microbiological criteria applicable to the alimentary products
2. the necessary procedures to achieve the objectives of the Regulation in order to reach its target
3. observe the control requirements of the temperature, applicable to the alimentary products;
4. observe the thermal chain;
5. take samples and make analysis;

The spaces where food products are handled have to be clean and maintained in good condition.

The structure, the design, the building and the position of the building, as well as the dimensions of the spaces where food products are handled, have to allow the maintenance, cleaning, and / or the disinfections needed, in order to avoid or to reduce at minimum the contamination and in order to provide sufficient working space. Also, they have to provide possibilities of hygienic conditions for all operations. Moreover, the working space has to avoid accumulation of dirt, to avoid contact with toxic substances, inclusion of particles into foods, to avoid vaporization and moldiness. Moreover, it is important to apply the good hygienic practice, to eliminate contamination and mostly to kill harmful organisms. It is necessary to have adequate conditions for handling and storing, with possibilities of fixing the temperature and with sufficient space for storing food products.

There has to be a sufficient number of toilets; also, the toilets have to have efficient draining system and they are not allowed to communicate directly with food handling spaces.

The sinks used to hand-washing have to be separated from the those used for food products; they have to be enough as number, to be placed in fitted spaces,

to dispose of cold and warm running water, as well as washing and drying facilities in a hygienic way.

The ventilation may be natural or mechanical, and same has to be efficient and to avoid the circulation of air from the contaminated areas to the clean ones. The sanitary fittings have to dispose of adequate natural or mechanical ventilation. The areas used for food products handling have to dispose of an adequate natural or mechanical lightening system.

The draining system has to comply with the destination. Same has to respond to the necessity of non contamination. If gutters are partially or totally uncovered, they have to be designed in such way to avoid the contamination. The sanitizers and the disinfection products are nor allowed to be stored in food handling areas.

The study was performed between April and June 2006, in a poultry cutting plant. The processing (cutting) is made exclusively manually. Therefore food safety depends on the application and implementation of the self-control system, including the state of health and the hygiene of the personnel, the control of the employees, personnel training and taking the samples for lab analysis.

The poultry meat supply is provided twice or three times per week, and the meat has to be cut into pieces (boneless chicken breasts, chicken thighs, chicken drumsticks, chicken wings, chicken backs wings on, chicken heads, tails, and wings, etc.) Out of the finished products, samples are taken for lab exams from each of the assortments, in order to check all products.

In order to take samples and to examine the finished products, within the Control Plan of the safety there have been established the following: sampling points, the person in charge with sampling, the acceptance criteria, the operating regulations that impose the criteria.

The self-control of the final products is performed within an authorized laboratory that the company has included in the program. The collaboration between the company and the lab is based on a contract where all obligations are stipulated, like the sampling means and analysis methods, as well as the conditions of bulletin release.

The self-control plan includes verifications of personnel health status, especially for the members that comes into contact with the products (the controls performed by the authorized cabinets have to be valid, the daily controls, who are making them, criteria of acceptance).

The inspection of hygiene status before operating is performed daily by an employee appointed for the application of the standard work procedure for sanitation.

The results of the inspection must be recorded into a register. The efficiency control of pre-operating sanitation is performed periodically through microbiological tests (sanitation tests), the samples being taken from the tools and from the surfaces by turns.

If spaces / equipments / tools have not been sanitized in a proper way, the sanitation will be repeated and the application of the undertaken measures will be mentioned in the register.

If analysis show that maximum acceptable limits have been exceeded for the analyzed parameters, the person in charge announces the sanitation team senior. He will establish the cause and to apply all the needed corrections and prevention measures. The applied measures are mentioned in the register.

Results and discussions

The results of the lab's analysis made on samples taken from pieces cut within a period of 4 months are presented in the table no.1

Samples from every assortment have been taken, respectively chicken thighs, chicken backs with wings, chicken drumsticks, chicken breasts boneless skin on, chicken breasts, chicken backs, chicken legs bone in.

All analyzed samples have been found acceptable from the sensory point of view.

Salmonella spp. analyzed as per SREN ISO 6579/2003 and the parameter Bacteria sulfite-reducing, analyzed as per STAS 2356/82 have been absent in all samples analyzed.

Following to the comparison with the maximum acceptable limit for the analyzed parameters, respectively, *Salmonella* spp (abs./25g) and the sulfite-reducing Bacteria, we conclude that all the analyzed samples are within the maximum acceptable limits.

For the parameter easy hydrolysable Nitrogen, as per the STAS 9065/7-74, the registered values are included within 16,6 mg – 21.6mg (with an average of 18.58), values that are included within the maximum accepted limit (25mg%).

The values for pH have varied between 5.8-5.9, with an average of 5.82. Compared to the maximum acceptable limits for this parameter (5.8 – 6.2), all the samples are within the accepted limits.

The results of the sanitation tests drawn from the working space and from the tools, respectively from the cutting table, knives, knife sterilizer, the clip machine, the packing machine and the plastic trays, are presented in the table no. 2. The values of the analyzed microbiological parameters (NTG and enteric-bacteria) are expressed in no/cm and they are within the accepted limits.

During the same period, within the auto control program, the FBO has drawn samples of water on a monthly basis in order to analyze the microbiological parameters, respectively the coli bacteria, faecal coliforms, faecal streptococcus and total no. of germs.

Table 1.
Lab tests results for cut pieces samples, drawn within April to June, 2006

No	Date	Assortment	Batch quantity	Sensory	Microbiologic		Physical chemical	
					Salmonella	Bacteria SR	Easy hydrolyzing nitrogen	pH
1	04.04.2006	Breast boneless skin on	5000	acceptable	abs	abs	21,6	5,8
2	07.04.2006	drumsticks	8200	acceptable	abs	abs	20	5,8
3	12.04.2006	Back with wings	6700	acceptable	abs	abs	16,6	5,8
4	14.04.2006	Chicken thighs	8000	acceptable	abs	abs	16,6	5,8
5	18.04.2006	Chicken breasts boneless	5000	acceptable	abs	abs	20,2	5,8
6	02.05.2006	Chicken breasts boneless skinless	6000	acceptable	abs	abs	21,1	5,8
7	09.05.2006	drumsticks	7000	acceptable	abs	abs	16,6	5,9
8	17.05.2006	Chicken thighs	8200	acceptable	abs	abs	18,5	5,8
9	19.05.2006	Chicken thighs	5000	acceptable	abs	abs	17,6	5,8
10	23.05.2006	Chicken breasts skinless	1045	acceptable	abs	abs	16,6	5,9
11	30.05.2006	Chicken breasts	5200	acceptable	abs	abs	18,5	5,8
12	02.06.2006	Chicken breasts skin on	5200	acceptable	abs	abs	18,9	5,8
13	07.06.2006	drumsticks	6200	acceptable	abs	abs	18	5,8
14	14.06.2006	Backs with wings	6200	acceptable	abs	abs	19,7	5,8
15	15.06.2006	Chicken legs	6200	acceptable	abs	abs	18	5,8
16	21.06.2006	Chicken breasts boneless	8200	acceptable	abs	abs	19,6	5,8
17	23.06.2006	Chicken legs bone in	800	acceptable	abs	abs	18	5,8
18	27.06.2006	Chicken backs	6200	acceptable	abs	abs	18	5,8
19	29.06.2006	Chicken breasts	5600	acceptable	abs	abs	18	5,9
20	04.07.2006	Chicken breasts skin on	7000	acceptable	abs	abs	18,8	5,8
21	07.07.2006	drumsticks	7000	acceptable	abs	abs	20,6	5,8
22	11.07.2006	Backs with wings	6200	acceptable	abs	abs	18	5,8
23	13.07.2006	Chicken thighs	6200	acceptable	abs	abs	18	5,8

Table 2

Sanitation tests results of samples drawn within April to June, 2006

No	Date	The place of drawing	Microbiologic	
			NTG	Enteric bacteria
1	11.07.2006	scale	0	0
2	12.07.2006	clip machine	0	0
3	13.07.2006	deboning table	0	0
4	29.06.2006	packing machine	0	0
5	27.06.2006	cutting machine	1	0
6	23.06.2006	plastic crate	0	0
7	21.06.2006	knife sterilizer	0	0
8	15.06.2006	deboning table	0	0
9	14.06.2006	scale	0	0
10	07.06.2006	clip machine	0	0
11	02.06.2006	deboning table	0	0
12	23.05.2006	knife sterilizer	0	0
13	19.05.2006	scale	0	0
14	17.05.2006	packing machine	0	0
15	09.05.2006	clip machine	0	0
16	02.05.2006	deboning table	0	0
17	18.04.2006	knife sterilizer	0	0
18	14.04.2006	packing machine	0	0
19	12.04.2006	scale	0	0
20	07.04.2006	clip machine	0	0
21	04.04.2006	deboning table	0	0

Conclusions

1. No values have exceeded the limits at the analyzed parameters for the poultry cuts samples, which leads to the conclusion that the functional self-control system in the unit is efficient.

2. The values of analyzed parameters following to sanitation sampling are within the normal limits, which prove that sanitation operations have been performed properly.

3. The existence of product contamination peril within processing units, enforces the need of permanent control; the implemented procedures may be used with good results, that allow taking the right measures.

References

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