

## HACCP SYSTEM IN FOOD TRADE WHY AND HOW?

*László Hegedűs\**

College of Nyíregyháza, Faculty of Economics and Social Studies,  
Department of Logistics and Project Management  
H-4400 Nyíregyháza, Sóstói u. 31.  
e-mail: hegedusl@nyf.hu

### ABSTRACT

The purpose is to adopt the operation of HACCP to the hierarchy of the company, and to test the CCP selection mode within HACCP that excludes errors. The result is the presentation of the target hierarchy containing the HACCP system, and of the objective CCP selection method.

### 1. INTRODUCTION

- Why do food trade enterprises need the HACCP system?

The endangerment in connection with comestible safety has entered a new dimension nowadays, as risk became global, while food chain became more complicated and harder to trace. (Szeitzné 2009).

The creation and maintenance of food safety is compulsory in the whole food chain, which is permitted by the operation of the identification and tracing as well as the HACCP and/or ISO 22000 and/or IFS systems – in the whole food chain (Sósné 2008, Balla-Síró 2007).

If the safety of the food is broken in any unit of the food chain, then it cannot be restored in the remaining units of the chain, and if it happens in food trade, then the efforts of the other units in the chain were spare. This is why the often stressed point of food trade - saying only the manufacturer is responsible for the safety of the food - is incorrect. This theme has to be amended with "...except the error was caused by someone else by not complying with the storage conditions suggested by the manufacturer" (Deák 2009). As the contamination endangering the health of the consumers can issue anywhere within the food chain (Szeitzné Sz. M. 2008). The affected trade enterprises suggest their partners by stressing out the obligate responsibility of the manufacturer that they have nothing to do with this case, they don't have to deal with protecting the supplied safe food from (microbiological, physical, etc.) contamination, or maintaining its safe state, etc. This kind of behavior may result in food safety systems existing only formally, their operation will not be adopted to the projects of trade companies, thus will not approve of achieving the strategy of the company.

- How to establish HACCP in food trade enterprises?

The steps of the configuration of HACCP system are reviewed by the no. 1-2-18/1993 regulation of the Hungarian Food Book. According to this most of the cases the significant dangers in food are defined by the "decision tree" method (Györi-Györiné 2002).

It's obvious that truly "critical" point of establishing a food safety system is the selection of CCP-s (Sósné 2002). Because if they are identified incorrectly then irrelevant, less dangerous points can get into the centre of attention, and the truly dangerous points will not be supervised. And if the negative change of condition affecting food safety might appear, then we will be unprepared and will not be able to encroach at once to solve the problem.

Besides the "decision tree" method I looked for an alternate method and I also tried it. According to my hypothesis CCP-s chosen by the two methods do not completely match, thus if the CCP-s are selected incorrectly then important dangerous points can fall out of control. As a result even dangerous food can reach consumers.

## 2. MATERIAL AND METHOD

- For the support of the necessity of HACCP:

For the support of the necessity of HACCP I had compiled the target hierarchy of food trade enterprises and inserted – after considering – the establishment and operation of HACCP system in it.

- For defining CCP-s while configuring the HACCP system:

Hence during my work – as an experiment – I defined the critical points in the activity of a food trade enterprise by two methods, and compared the results.

- One of the methods was based on the usage of the "decision tree", which means that the critical points of the process have been defined empirically, through a consensus between the members of the HACCP team.

- The other method is the objective method based on lab examinations, which can define critical points without doubt. The lab examinations were performed according to the methods listed in the 3<sup>rd</sup> book of the "Hungarian Food Book: The Official Collection of Methods for the Examination of Food" (2005).

This was followed by the comparison of the results by the two methods, which showed that there may be significant differences concerning CCP-s.

The first steps of the configuration of HACCP system are demonstrated on figure 1.

## 3. RESULTS AND DISCUSSION

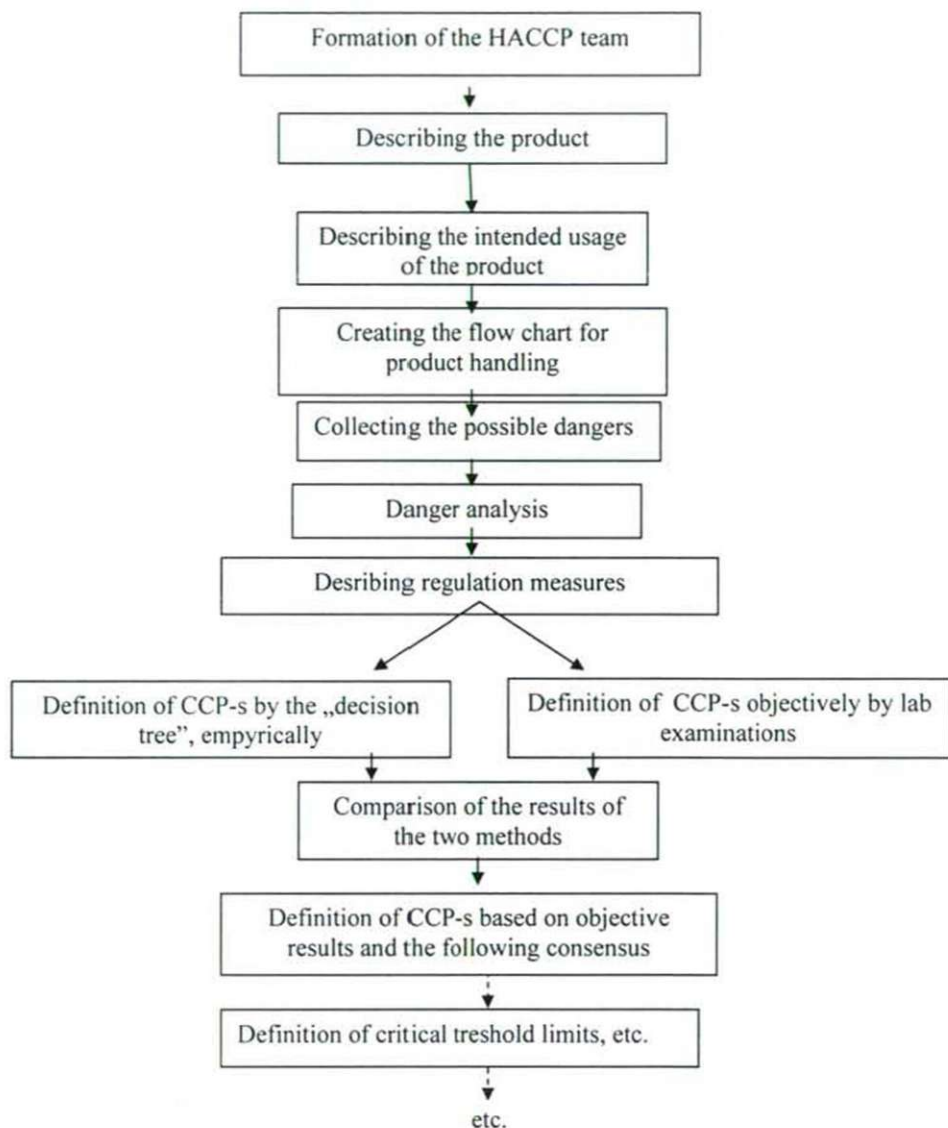
- The support of the necessity of HACCP:

The first step for the board of food trade enterprises is the creation of the target hierarchy, namely processing the strategy and future plans of the company and then defining and achieving projects for their achievement.

Establishment and operation of the HACCP system is important amongst the projects.

The target hierarchy helps visualize the purpose and place of the food safety (quality improvement) system in the achievement of short term and long term targets of the food

trade enterprise. It helps understanding that establishment and operation of HACCP (TQM, etc.) systems has to be achieved as a project. This approach is presented on Figure 2.



*Figure 1. The first steps of the configuration of HACCP system*

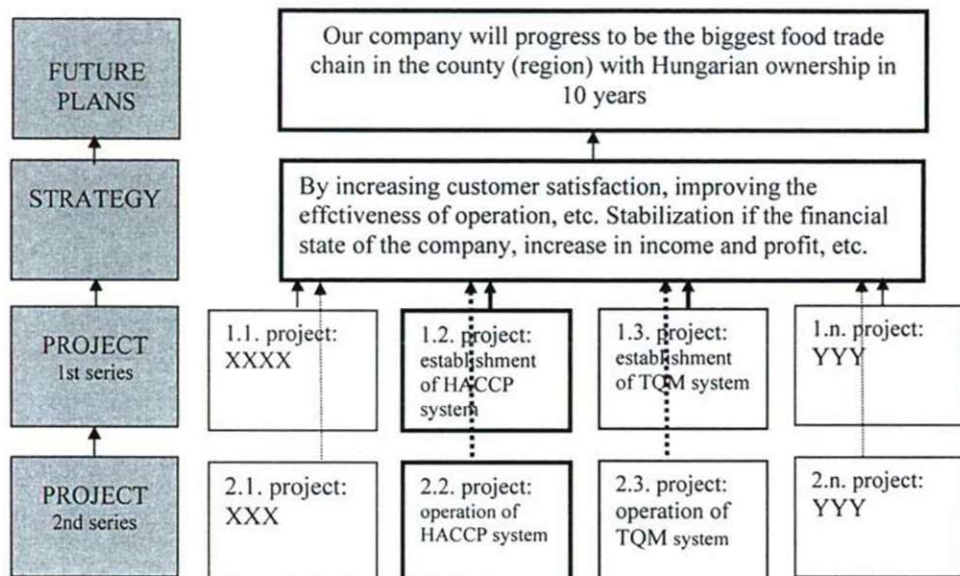


Figure 2. Example of the target hierarchy of a trade enterprise

Studying the figure can help the leaders and employees of the company realize the necessity of the establishment of HACCP (TQM, etc.) systems, and the meaning of the importance of their operation. To realize that these systems can only be operated with a project approach, thus applying HACCP (TQM, etc.) can be a project every year. This means that we have to set the aim of their operation every year, and provide resources for them. The aim has to be set every year in a way that it should progress towards achieving the strategy.

Thus in the first series of projects (eg. in the 1<sup>st</sup> year) the aim is the processing and establishment of the systems, while in the second series of projects (eg. in the 2<sup>nd</sup> year) the operation of the systems means the project.

The aim of operation – e.g. in case of the HACCP system – can be:

- Increasing the safety of the food – for the sake of customer satisfaction – by processing a control system for dealers, by processing and introducing taking the products from a food safety point of view.

As a closure of the project the rate of reaching the targets is estimated. Then the aims, projects, etc. are selected for the next year.

- For defining CCP-s upon establishing the HACCP system:

The results of defining the critical points by two methods differ from each other, which is presented through the process of retail handling of "Loose culinary and confectioner products" product group. (This product group contains the following: various culinary products not in unique retail wrappings, confectioneries requiring and not requiring cooling, etc.)

I had performed microbiological examinations in every steps of the process. The selection of microorganisms to be examined and valuing the results were performed according to 4/1998. (XI.11.) EüM. order. The comparison of the results by the two methods are presented in Table 1.

*Table 1. Comparison of the two CCP definition methods*

No. of step	Name of procedure	CCP-s (defined by the usage of the "decision tree", in teamwork)	CCP-s (defined by microbiological laboratory examinations)
Threshold level [according to 4/1998. (XI.11.) EüM. order]			
1.	Purchase		
2.	Transport (with own equipment)		X
3.	Taking over the product		
4.	Storage	X	X
5.	Unloading in the shop and reloading in the depository		
6.	Storage in shop		X
7.	Standard marketing		
8.	Self-service marketing		
9.	Pre-packing	X	

As the last two columns of the table show, although the CCP list defined by two methods matches in certain cases, there is a often a difference between CCP-s defined empirically in teamwork, and CCP-s defined by laboratory calculations (based on objective data).

This means a serious problem concerning attention, regulation, control, etc. turns towards the occasionally incorrectly defined CCP-s and not towards truly critical procedure steps. As a result food safety dangers on the critical points not recognised by the traditional method can "unperturbedly" harm the health of the consumers, and decrease the trust of the customers.

#### 4. CONCLUSIONS

Inserting the establishment and operation of the HACCP food safety system in the target hierarchy of the food trade enterprise the necessity of the system becomes visible for the management and coworkers of the company. Project oriented establishment and operation of the system helps achieving the strategy.

The most critical point in the establishment of the HACCP system is selecting the CCP-s, thus besides or instead of using the "decision tree" basing the definition of CCP-s on objective calculations is (also) suggested. As a result of this method, the attention can be turned towards those steps of food handling processes, that can seriously endanger the safety of food.

## REFERENCES

1. Balla Cs., Síró I. szerk. (2007): Élelmiszer-biztonság és –minőség II., Mezőgazda. 93-105. p.
2. Dr. Deák Ferenc (2009): Az új élelmiszerlánc felügyelet szabályozása. Sütőiparosok, pékek. LVI évf. 1. szám. 28-32. p.
3. Györi Z. - Györiné M.I. (2002): Minőségrendszerek bevezetésének és alkalmazásának tapasztalatai növényi termék előállításban. Magyar Minőség. 11. sz. 21-25. p.
4. Magyar Élelmiszerkönyv I. 1-2-18/1993. sz. előírása: A Veszélyelemzés, Kritikus Szabályozási Pontok (HACCP) rendszerének alkalmazása. (1998).
5. Magyar Élelmiszerkönyv III. Hivatalos Élelmiszervizsgálati Módszergyűjtemény. (2005).
6. Sósné Dr. Gazdag Mária (2008): Jogszabályi megfelelés és különböző élelmiszerbiztonsági rendszerek követelményei. Konzervújság. 1-2. szám. 18-23. p.
7. Sósné G. M. (2002): A HACCP élelmiszerbiztonsági rendszer gyakorlati alkalmazása In: Györi Z. szerk.: Minőségirányítás az élelmiszergazdaságban 125-139. p.
8. Szeitzné Sz. M., Krisztalovics K., Sréterné L. Zs., Fehér Á., Cseh J. (2008): Magyar-ország mikrobiológiai élelmiszerbiztonsági helyzete. ÉVIKE Különszám. 7-11. p.
9. Szeitzné Sz. M. (2009): Gondolatok a globális élelmiszerbiztonságról. Élelmezési Ipar. LXIII. évf. 2. szám. 51-52. p.
10. 4/1998. (XI.11.) EüM. rendelet az élelmiszerekben előforduló mikrobiológiai szennyeződések megengedhető mértékéről.