IMPORTANCE OF APPLICATION OF HAZARD ANALYSIS AND CRITICAL CONTROL POINT (HACCP) IN MONTENEGRO TOURISM

***Vesna Vujacic* ,**

University of Montenegro,
Faculty of Tourism and Hotel Management Kotor
Montenegro.

ABSTRACT

Tourism in Montenegro is the leading economic sector, a culinary product - food is an important element of tourist offers. With the development of tourism in Montenegro there is a need to provide quality as well as safe healthy food according to international standards. This paper presents the concept of HACCP and importance of its application in the tourism and hospitality industry. HACCP is a food safety management system through the analysis and control of biological, chemical and physical hazards in the entire process, from raw material production, procurement, handling, to manufacturing, distribution and consumption of the finished product. HACCP is designed to act preventively with its principles and presents the most effective solution in providing healthy safe food. The aim of this paper is to present the importance of the application of HACCP concept in tourism of Montenegro as a recognizable and accepted international standard.

Keywords: tourism, food safety importance.

INTRODUCTION:

Montenegro as a tourist destination is a country rich in natural resources for food production, and therefore it has the opportunity to develop Culinary tourism. One of the conditions for the successful development of tourism is providing high-quality and healthy food. The hospitality business is specific in terms of ensuring healthy safe food. There is a large number of products and processes in the hospitality industry that are performed in the preparation and serving of food, where the food comes into contact with a variety of equipment and surfaces with special emphasis on the constant presence of staff who manipulate with food. One of the basic rights of every individual is the availability of healthy safe food. HACCP concept is present in the world since 60's of the twentieth century. It was originally created for the U.S. Corporation for National Aeronautics and Space Administration (NASA) to provide a safe product. HACCP concept from the1st of January, 2006. became mandatory in the EU (Vucic et al., 2006). In this regard, the Government of Montenegro adopted the Strategy for healthy safe food, that states: "avoiding or reducing of excesses caused by food can be done through the following actions of defining and developing of an integrated, comprehensive and sustainable food safety system together with a capacity building; implementation of measures- GHP -good hygiene practice, GMP-good manufacture practice and HACCP concept along the entire food chain from the primary production to the final consumer "(Government of the Republic of Montenegro, Food Safety Strategy, 2006).

CULINARY TOURISM:

Culinary tourism is a part of cultural tourism, and can be defined as the realization of a unique and unforgettable experience in the food and drink consumption (http://en.wikipedia.org/wiki/Culinary_tourism). National kitchen is a part of the cultural hallmark of every nation. Tourists are interested to become familiar with these characteristics of a nation especially since food consumption is one of the primary needs of a man and also one of three favorite activities of tourists (http://www.culinarytourism.org/introduction). Consumption of food leaves a very strong impression on gastro-tourist and it is one of the most important motives for movement. What makes culinary tourism so special is that it is accessible to tourists during the whole year, 365 days per year. The rapid development of culinary truism as well as the increasing numbers of tourists interested in this type of tourism characterize the first decade of the new millennium. This is proved by numerous examples from Europe and the world: Austrian wine route, the English Peak District National Park, great Niagara Falls Culinary Route (Hall et al., 2003).

Addition to natural and cultural resources, Montenegro has a distinctive local products and national cuisine, which can be attractive for tourists, especially for lovers of gastronomy-gastro-tourists. Moreover, there are three basic types of cuisine in Montenegro: Mediterranean cuisine, cuisine of Skadar Lake and cuisine of northern Montenegro. Each type of cuisine has its own distinctive specialties (coastal cuisine has famous seafood dishes made with the olive oil with the use of various herbs, in the area of Skadar Lake there are lake fish, wine and fruit, in the north of Montenegro there are various dairy products and meat). Culinary tourism in Montenegro is promoted through numerous events on which food is the main motivation (promotion of smoked specialties in Njeguši, Fish and wine festival in Virpazar, Honey Days in Podgorica, Olives Days in Bar. All of this points to the importance of international standards implementing, in particular HCCP concept.

INTERNATIONAL STANDARD OF FOOD SAFETY MANAGEMENT ISO 22 000:

Hotel Management as a part of the hospitality industry has an obligation to harmonize its services comply with internationally recognized standards, and a standard is the recognized reference and the answer to market assessment (Perovic et al., 2007). For the development of tourism in Montenegro, it is important that checking and compliance come from the foreign guests, and if the guests are satisfied with the quality of services then it is a significant indication of the application of appropriate standards. Quality represents market category that encompasses the totality of creation and realization of material products and services at the level to which their properties ensure compliance with the requirements of demand. (Kosar et al., 2005).

ISO-International Organization for Standardization is the institution responsible for standards. The best-known standards are ISO 9000. In the basis of this standard is to protect customers and users through prescribed, implemented, documented and regularly updated composition for quality management, in which was integrated classic quality control of the products and services of any organization (Cerović, 2005). ISO standards are applied in many economic activities. From the aspect of food safety, the most important standard is ISO 22 000 which define the requirements for management systems in food safety where the organization of the food chain requires to demonstrate the ability to control the potential hazards that threaten to food safety in order to ensure

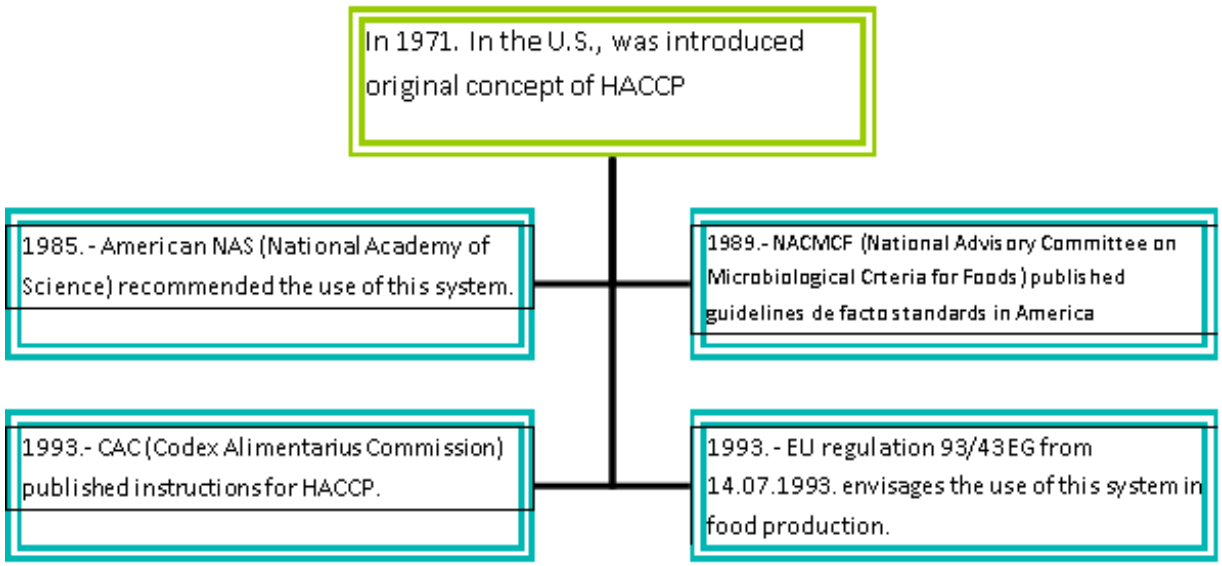
food safety at the time of consumption. It is applied to all organizations regardless of size (http://www.iso.org/iso/catalogue_detail?csnumber=35466). ISO 22 000 relies on Good Manufacturing Practice GMP Good Manufacturing Practice, HACCP concept and directives in the field of hygiene GHP-Good Hygienic Practice, and thus ensures food safety system.

THE ORIGIN AND DEVELOPMENT OF THE HACCP CONCEPT:

At the beginning of the nineties of last century, prevention system that is used in food production has found wide application, as a system of quality assurance of healthy food safety. This concept is known as HACCP, and it began to develop in 1959. , when the USA's Pillsbury Company in cooperation with NASA-National Aeronautics and Space Administration for the purpose of space exploration has received an order to produce foodstuffs intended for cosmonauts consumption. Food had to be safe, not infected by viruses, bacteria or toxic substances, without chemical and physical hazards that could lead to some disease of cosmonauts. Practical application as an integrated system in the production of food in most western countries started in 1991. (Vucic et al., 2006).

HACCP - Hazard Analysis and Critical Control Point system is scientifically based, rational and systematic approach for identification, assess and risks control in the process of production, processing, preparation and use of food, in order to ensure that food is safe for consumers, that it does not represent an unacceptable risk to human health. History of HACCP starts in the seventies of the twentieth century (Figure 1st). The HACCP concept was introduced to the public in 1971 on the public National Conference on Food Protection USA, after which the Pillsbury Company entered into an agreement to conduct training for staff of the FDA - Food and Drug Administration in the field of the basis of the HACCP system (Vucic et al., 2006). The HACCP concept was based on the engineering principle of errors analysis, modes and effects at any stage of the process. When it was introduced to the public in 1971 as an approach to food safety, it has gained great interest among food producers, and has been used as the basis for regulations related to food safety. In addition, the FDA (Food and Drug Administration) started to use HACCP for research activities. But over time, the interest in HACCP is gone, and only a few large companies have continued with the implementation of the HACCP concept. In the eighties of the twentieth century, the NAS / NRC (U.S. National Academy of Sciences-National Academy of Sciences USA / National Research Council) was requested to form a committee that will generate some general principles for the application of microbiological criteria for foods. The committee has proposed the implementation of the HACCP food safety program. They suggested that a complete food industry receive appropriate training on the proper application of the HACCP concept (Stevenson, 1990). Subsequently, the concept was accepted by the World Health Organization and FAO-Food and Agriculture Organization of the UN (Mortimore et al., 1998).

Figure 1: History of the HACCP



We can say that today the HACCP concept is condition and legitimacy for the international food trade. In most European countries it is legally conditioned. In Montenegro, the advantages of this system are not yet

sufficiently known to a large number of companies, but in recent years, an interest and a tendency for the introduction of the system have increased.

THE IMPORTANCE OF APPLICATION AND BENEFITS OF INTRODUCTION OF THE HACCP CONCEPT:

The main goal of the HACCP concept is to produce a safe product. The microorganisms that cause various diseases, as well as a number of harmful chemicals, are examples of some of the dangers that the HACCP concept can reduce or eliminate completely. There isn't a process that is 100% safe, but constant effort for avoiding errors must always be present (Swanson et al., 2000).

HACCP system provides:

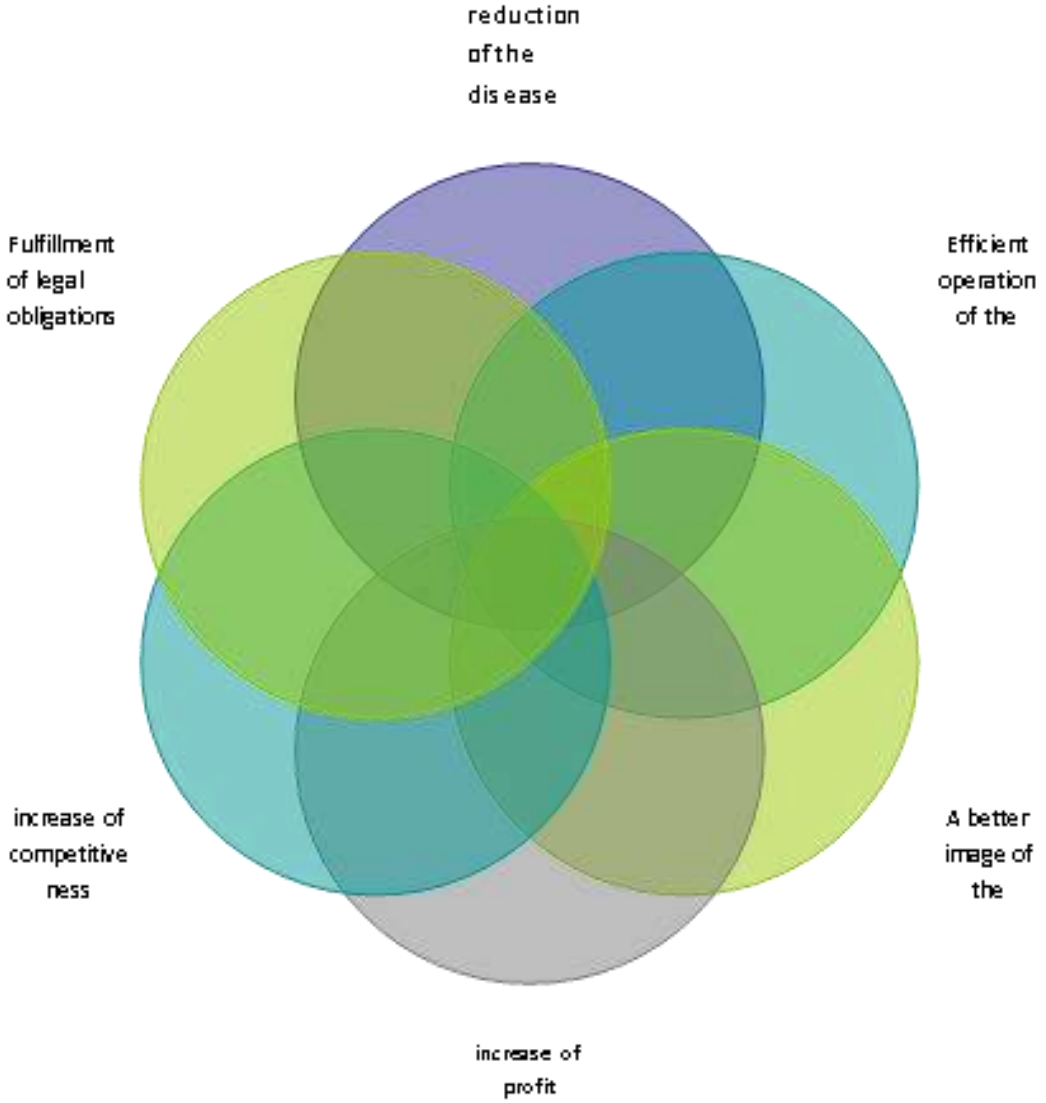
- Identification and assessment of any physical, chemical or biological risk, at all stages of food production, including all mid-processes and distribution;
- Determination of the necessary measures for their prevention and control;
- Ensuring that these measures will be successfully and effectively implemented.

HACCP concept as a preventive system ensures food safety in every step of the production process. It is developed specifically for each product / product group or process and must be defined to fit the specific conditions of production and distribution of each product separately. This concept attempts to reduce the need for testing of the final product. Before this system was developed, many manufacturers could find out whether their product meets certain standards only after the testing of the final product. The testing of final product can be extremely time-consuming, and can lead to the loss of a portion of the product, since some forms of the testing are extremely destructive (Bowman, 1990). HACCP concept is trying to reduce the need for testing of the final product by conducting a series of checks during the process. The simplest defined, HACCP is a system that can be used as a set of procedures for the process control and sensitive points in the chain of food production, with the ultimate goal is that the consumer consumes food in the state and in a manner that will be safe for his health. This system provides production and marketing of healthy food. In the developed world, the application of HACCP principles is widespread, while in the EU is legally binding. The ultimate goal is to make a safer procedure that produces a safer product by its application. This does not mean that the application of HACCP always provide 100% safety for users, but it means that the company produces food in the best and safest way possible. Implementation of the HACCP system involves the safer approach to the production, starting from the procurement process of primary materials and production of finished products, to the mode of management and employees, and their attitude towards the ultimate consumer. In other words, companies in the implementation of HACCP systems are required to meet all of the technical-technological standards that enable the implementation of this program. It should be noted also the fact that the EU companies that do business with foodstuffs are extremely selective about the business with suppliers from countries outside the EU. Since Montenegro has the potential for the production and export of the high quality and safe food, it is essential that the whole food production as soon as possible switch to the application of the HACCP system, as a comprehensive concept of ensuring of food safety. Hazard Analysis and Critical Control Points (HACCP) represents a systematic preventive approach to food safety, which sees chemical, biological and other irregularities that can occur in all processes of production, preparation, packaging, distributing of food and gives solutions to prevent them in practice. The concept is, since 2011 in Montenegro, legally binding, and companies, including hotel, decided to implement the standard. When it comes to tourism it is known that food is a risky element of hotel offer, because at each stage it can spoil (a large number of suppliers, different number food-technological processes, ways of serving, changes in selection of dishes, etc.). In the hospitality industry the HACCP concept is "a concept that acts preventive: setting goals, planning, acting, measurement, analysis and improvement, which prevents occurrence of an accidental cases or emergency or threating to the guest health. HACCP affects the mode change, ways of behavior towards guests, means of production and the work products, culture and consciousness of participants in the working process of the catering facility (Curcic et al., 2007). The objectives must be constantly reviewed, always increase because that's the essence of progress. According to the FDA - Food and Drug Administration benefits of the HACCP concept in relation to other food safety system are that this prevention program (http://www.fda.gov/Food/GuidanceRegulation/HACCP/ucm2006801.htm):

1. It is based on identifying and preventing hazards that contaminate food
2. It is based on healthy science
3. Enables more effective supervision of the competent agency because recordkeeping allows inspections to conclude how companies comply with regulations on food safety during the period.
4. For the production of safe food, a manufacturer or a distributor is considered to be responsible.

Implementation of HACCP is "a detailed technical evaluation of the product and the process requires time, dedication, scientific and technical expertise to implement hazard analysis, control establishing and monitoring procedure." (Mayes et al., 1999). Implementation requires specific knowledge, skills and abilities for successfully implementation of the concept. In addition to these advantages, the implementation of the HACCP concept potentially reduce the cost of various analyzes, both external and internal. One of the major advantages is the early release of finished products on the market, and that decreases inventories. The implementation of the HACCP system almost completely eliminates the financial expenses that occur in the form of reduced sales, through court costs and compensations, and the most over the loss of confidence among consumers (Figure 2). In other words, HACCP is a very cost effective because it prevents the formation of the costs of incidents and unnecessary waste. At the same time, the HACCP concept protects producers from the negative publicity.

Figure 2: The importance of the application of the HACCP concept



SEVEN PRINCIPLES-THE BASIS OF THE HACCP CONCEPT IMPLEMENTATION IN A CATERING FACILITY:

In order to successfully apply the HACCP concept in a catering facility, it is necessary to implement appropriate preparations of the activities:

1. Raising awareness in the management of the hotel and the manager of the kitchen- restaurant block about the need for the establishment of the HACCP concept. The HACCP concept is accepted voluntarily and with the aim to improve the quality of the hotel management and to provide complete service and satisfaction of the guests.
2. Raising awareness about the need for the establishment of the concept among other employees in the procurement, transport, warehouses and kitchen-restaurant-block.

3. Training of management and systematic training of employees. This stage is very useful because it is one of the elements of effective implementation of the HACCP concept. Opportunities should be created for joint training of the hotel management, employees, suppliers, inspection bodies and all those entities that are in some way related to food.
4. Establishment of the HACCP teams: the main HACCP team and teams per individual processes. In order to introduce the HACCP concept it is necessary to include all employees, who are in some way related to food, in the application process and to establish a HACCP team that will take over all the activities regulated by this concept. The team presents some hotel employees and also may be hired external associates.

Management appoints the HACCP team, defines its leader, defines the scope of the team and deadlines, ensures resources for the establishment for the team, implementation and validation of the HACCP system, adopts and implements a policy of food safety (Buncic, 2009).

After these steps, the HACCP team must develop seven HACCP principles. Initially the HACCP protocol consisted of three principles:

- Identification of risks
- Determination of the critical control points for the control of any risk
- Establishment of a monitoring system

In 1989, American National Advisory Committee on Microbiological Criteria for Foods (NACMCF) has included four principles to the HACCP system (Sperber, 1991), and seven principles that now form the HACCP plan are:

- Principle 1 : Hazard Analysis
- Principle 2: Determination of critical control points (CCP)
- Principle 3: Identifying of the critical limits for each CCP
- Principle 4: Establishing of the monitoring system for each CCP
- Principle 5: Defining and implementation of the corrective measures
- Principle 6: Establishment of the system verification
- Principle 7: Establishment of the documentation and record keeping

FIRST PRINCIPLE: IMPLEMENTATION OF HAZARD ANALYSIS:

The first principle relates to the implementation of the Hazard Analysis and the HACCP team must identify all potential hazards in terms of threats to food safety. Risks may occur at any stage of the process. Hazards may include biological (bacteria, viruses, mold, parasites, toxins, micro-organisms), chemicals (natural plant and animal toxins, artificial fertilizers, pesticides, additives, chemical cleaning agents), physical (glass, stones, metals), and other hazards (radiation, hazardous transport conditions, storage). All potential hazards should be recorded and assess - this is the process of the hazard assessing. The better hazard analysis is performed, the more risk is taken into account, it will facilitate the practical operation of the catering facility. The result of this activity is adequate documentation.

THE SECOND PRINCIPLE: DETERMINATION OF CRITICAL CONTROL POINTS:

When hazard analysis is completed, the HACCP team must decide which steps present critical control points (CCP Critical Control Points). CCP is a point in the process where specific risk can be eliminated or reduced to an acceptable level. That is also the point at which the risk, if out of control, can significantly threaten food safety. Critical control points require more careful monitoring and extensive documentation, which is why the team must be limited to those that are truly critical (Arvanitoyanuis, 2009). "Under the critical control points (CCP) is understood phase of the production process in which the undesirable risk can be prevented, reduced or kept to a tolerable level" (Pocuca et al., 2004). CCP can be located at any stage and in places where the occurrence of hazards has already been placed under preventive, eliminated or reduced to an acceptable level. CCP may include thermal processing of food, foods freezing, testing of ingredients in terms of the existence of potential chemical residues in kitchen block.

THE THIRD PRINCIPLE: DETERMINATION OF CRITICAL LIMITS:

This principle dictates that when the critical control points are identified, the critical limits for each CCP must be established. The critical limit is the maximum or minimum value to which a specific parameter must be controlled at each CCP. To put it simply -critical limit separates what is acceptable from the unacceptable and what is important is that these values must be measurable. The usual critical limits are measuring of temperature,

time, percentage of moisture and salt concentration.

THE FOURTH PRINCIPLE: ESTABLISHMENT OF A SYSTEM FOR MONITORING OF EACH CRITICAL CONTROL POINTS:

The next principle is monitoring of each CCP and critical limits. Monitoring of every critical limit is important because it helps to ensure that CCP are in compliance and that the critical limits are not exceeded. Critical limits can be monitored continuously or periodically. This principle requires establishment, implementation and analyzing of the monitoring procedures. Monitoring presents operations that are carried out routinely, and which measures the value of each critical control points according to the criteria defined by the critical limits for each critical control point individually. This process is usually done in tables.

THE FIFTH PRINCIPLE: DEFINITION AND IMPLEMENTATION OF CORRECTIVE MEASURES:

This step defines and implements corrective measures in case if critical control points are not under control. It is important to find the causes, determine the level that would meet the criteria, record the corrective actions that have been filed, archive them and repeat the assessment of the HACCP plan.

THE SIXTH PRINCIPLE: ESTABLISHMENT OF VERIFICATION OF THE SYSTEM:

This step includes: validation of the HACCP the system and verification of the HACCP system. Validation presents the process of testing the system in terms of individual risk, and verification procedures include the review of the HACCP system and records, deviations from regulations, as well as confirmation that the CCP are under control. These processes are not performed by the members of the HACCP team of a catering facility to ensure complete objectivity of the system verification.

SEVENTH PRINCIPLE: ESTABLISHMENT OF A SYSTEM OF DOCUMENTATION AND RECORDS:

This principle aims to establish processes, procedures and records that confirm the effectiveness of the HACCP concept in a catering facility. Without documentation, there is no evidence that the process functions as planned by the HACCP plan in a catering facility. The documents that are verified include: the HACCP rules of procedure, the HACCP plan, procedures, instructions, etc. HACCP rules of procedure contain all information about HACCP in a catering facility. HACCP concept is designed to monitor continuously the risks in business in small intervals. Adequate records must be kept about any proceeding, and they are analyzed on the basis of the analysis we make the necessary conclusions. The importance of the application of the HACCP concept in a catering facility is a significant increase in the quality of food service to guests by offering a healthy safe food.

CONCLUSIONS:

Hazard Analysis and Critical Control Point concept is a system with which the risks associated with food safety are identified, assessed and controlled. This system is based on the application of the proper, controlled and monitored technological processes. It can be applied in all processes of production, preparation, distribution and serving of food. In addition to the food industry in the program of mandatory implementation of the HACCP concept hotels and restaurants are included. The HACCP concept is a flexible system and it is based on a preventive approach. In the hospitality industry, the guests safety consuming food is particularly important. Hospitality business is specific in terms of ensuring healthy food (a large number of suppliers, different number of food-technological processes, ways of serving, changes in dishes offer, etc.), and a major goal of the HACCP concept is a safe product-healthy safe food. The HACCP concept brings long-term benefits that are reflected in: raising of the overall quality of services in a catering facility, reducing costs, ensuring of guest satisfaction and so on. In Montenegro, a small number of hotels and restaurants introduced this concept. The reasons are various: high initial price of investment, inadequate promotion of the HACCP concept, implementation of a concept which requires constant efforts. A positive tendency is to more and more talk about the importance of the HACCP concept, that this standard is a legally binding document since 2011. In Montenegro and the hotel industry as a representative part of the hospitality industry has an obligation to harmonize their services with recognized international standards because they are a response to market evaluating of service quality.

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