



Serbian meat industry: A survey on food safety management systems implementation

Igor Tomašević^{a,*}, Nada Šmigić^a, Ilija Đekić^a, Vlade Zarić^b, Nikola Tomić^a, Andreja Rajković^a

^a Food Safety and Quality Management Department, University of Belgrade, Faculty of Agriculture, Nemanjina 6, 11080 5 Belgrade, Serbia

^b Department of Agroecology, University of Belgrade, Faculty of Agriculture, Nemanjina 6, 11080 5 Belgrade, Serbia

ARTICLE INFO

Article history:

Received 27 September 2012

Received in revised form

19 November 2012

Accepted 27 November 2012

Keywords:

Food safety management

HACCP

Meat industry

Incentives

Costs

Difficulties

Benefits

ABSTRACT

This paper reports incentives, costs, difficulties and benefits of food safety management systems implementation in the Serbian meat industry. The survey involved 77 producers out of which 93.5% claimed that they had a fully operational and certified HACCP system in place, while 6.5% implemented HACCP, but they had no third party certification. ISO 22000 was implemented and certified in 9.1% of the companies, while only 1.3% had implemented and certified IFS standard. The most important incentive for implementing food safety management systems for Serbian meat producers was to increase and improve safety and quality of meat products. Investment in the new equipment, civil work in the plant including redesign of production facilities were the costs related to the initial set-up with the greatest importance. The results indicated that the major difficulty encountered during HACCP implementation and operation was associated with the finance, namely the fact that companies were not able to recoup costs related to the implementation/operation of HACCP system. The most important identified benefit was increased safety of food products with mean rank scores 6.45. The increased quality of food products and working discipline of staff employed in food processing were also found as important benefits of implementing/operating HACCP in Serbian meat industry. The study shows that the level of HACCP, as standalone food safety system or incorporated in part to ISO 22000, implementation is high and its benefits to the meat industry in Serbia are widespread and significant.

© 2012 Elsevier Ltd. All rights reserved.

1. Introduction

Several trends are bringing greater attention to food safety regulation in many countries. Science is identifying new foodborne pathogens and understanding their potential for serious consequences. Demand for safer food is growing as consumers now better understand the links between diet and health. The proportion of food obtained from food services is increasing, even in middle income countries, and this reduces consumer control over food handling and preparation. These trends converge to create both public and private demand for greater food safety. At the same time, governments everywhere are trying to make more efficient use of public resources.

Serbia officially applied for European Union membership on 22 December 2009. The European Commission recommended making it an official candidate on 12th October 2011. Even with candidate status, it is likely that Serbia will have to wait for a starting date for

negotiations with the European Commission in order to bring its laws in line with union laws, a process that can take some time.

Ensuring full safety of food in compliance with international standards is of crucial importance for the industry and consumers, because of the economic but before all the public health aspects. It is a significant element of measures taken in food sector as a part of Serbia's overall efforts to join the EU structures. One of the tools to ensure safety of food in Serbian food production companies is obligation to implement Hazard Analysis and Critical Control Point (HACCP), including required pre-requisite programs that depend on the segment of the food chain in which the organization operates and the type of organization.

In Serbia the obligatory application of the system was firstly introduced by virtue of the Veterinary Law (Anon, 2005) which obligated all the animal origin food producers, regardless of their size, to: "adopt and implement food safety management system based on the principles of Good Hygiene and Good Manufacturing Practices and the system of Hazard Analysis and Critical Control Points principles (HACCP program)" (article 82). For all HACCP implementation activities a deadline was set for January 1st 2009 (article 170).

* Corresponding author. Tel.: +381 653183309.

E-mail address: tbigor@agrif.bg.ac.rs (I. Tomašević).

Few years ago, it was almost evident that all of us, legislators, inspection, food safety experts, food industry itself were not able to accept HACCP without wandering, interference of the politics and attempts to do something special and Serbia unique – but in a way how it was done by the rest of the developed world (Radovanovic, 2006). HACCP system became compulsory for the Serbian food producers since 2009 when new Food Safety law was adopted (Official Gazette of Republic of Serbia, No. 41/09) and today it should be in place in all food establishments. Little information exists regarding motives and costs, difficulties and benefits of HACCP implementation or any other food safety management system in Serbian food sector.

With the view to the approaching date of Serbia's accession to the EU a survey was carried out to check how far the activities related to practical implementation of HACCP and other food safety management systems have been advanced in Serbian meat industry establishments. This paper is devoted to the survey.

2. Material and methods

The survey was conducted from June 2011 till September 2011 involving 77 producers of meat products in Serbia on voluntary bases. Based on the available literature (Henson, Holt, & Northen, 1999; Herath & Henson, 2010; Maldonado et al., 2005), a questionnaire of 11 questions was developed to identify the effects of HACCP implementation in Serbian meat industry which included the issues regarding general information about the food business operators (such as the number of employees, status of HACCP system, the information about the educational level, age, work experience and number of HACCP team members). Questions related to pre-requisite programs that are implemented in the company were also included. Further questions were related to the incentives for implementing HACCP system, costs, benefits and difficulties in implementation/operation of HACCP system, time necessary for HACCP implementation, food safety management system certification. All producers have been visited and on-site interviews have been performed. Respondents were mainly HACCP team leaders, production managers or owners. The respondents ranked these factors in order of importance according to their own conditions and experiences. The Statistical Package for the Social Sciences (SPSS – Release 12.0.0) was used for the data analysis.

3. Results and discussion

The size of the companies that responded to the survey classified by the number of employees (Table 1) was as followed: 19.5% of the companies employ less than 10 people, 35.0% employ between 11 and 50, 32.5% employ between 51 and 250 and only 13% of the companies employ more than 250 employees. According to the enterprise size class breakdown defined by the European Commission (Eurostat), 87% of the companies surveyed were micro, small and medium enterprises, while only 13% of them can be regarded as large ones. From 77 companies that responded to the survey, 72 companies (93.5% of the sample) claimed that they had a fully operational and certified HACCP system in place, while 5 companies (6.5% of the sample) implemented HACCP, but they had

Table 1
Number of survey respondents by number of employees ($n = 77$).

Number of employees	Number (%)
Less 10	15 (19.5%)
11–50	27 (35.0%)
51–250	25 (32.5%)
Above 251	10 (13.0%)

Table 2

Status of HACCP system and other food safety management systems for companies responding the survey ($n = 77$).

Status	Number (%)
Fully operational and certified HACCP system	72 (93.5%)
Operational HACCP system without certification	5 (6.5%)
Fully operational and certified ISO 22000 standard	7 (9.1%) ^a
Fully operational and certified IFS standard	1 (1.3%) ^b

^a Companies having both HACCP and ISO 22000.

^b Companies having both HACCP and IFS.

no third party certification at the time the survey was conducted. In addition to HACCP system, 7 companies (9.1% of the sample) implemented and certified food safety management system ISO 22000, whereas only one company (1.3% of the sample) had implemented and certified IFS standard (Table 2). Nowadays, The ISO 22000 international standard specifies the requirements for a food safety management system that involves interactive communication, quality management system, pre-requisite programs and the HACCP principles (Gaaloul, Riabi, & Ghorbel, 2011). The practice of ISO 22000 in Serbian meat industry has not yet created global leadership like it has done for the Australian meat industry (Khatri & Collins, 2007).

Our survey showed that all surveyed companies implemented HACCP whilst similar survey in Poland at the time of being a candidate country to the European Union, confirmed only 55% of meat and poultry companies claimed to have HACCP and as much as 9% of them claimed that will not going to implement it ever, back in 2003 (Konecka-Matyjek, Turlejska, Pelmer, & Szponar, 2005). The Mexican meat industry in 19.6% of the surveyed plants showed no interest in implementing HACCP (Maldonado et al., 2005). In Spain HACCP system implementation is mandatory since the early 1990s and yet the study investigating Madrid's autonomous community meat sector HACCP implementation revealed poor HACCP system complying with the official requirements and 27.5% of meat businesses without its implementation (Celaya et al., 2007). The presence of HACCP throughout the Chinese meat industry is also moderately low (50%) (Jin, Zhou, & Ye, 2008) and is in sharp contrast to the findings of our survey.

Of the 77 surveyed Serbian meat enterprises that have HACCP in full operation, 28 (36.3%) have adopted ISO 9000 quality management standards which is more compared to 6.5% of the surveyed Mexican meat enterprises (Maldonado et al., 2005), almost equal to 33% of Turkish (Bas, Yuksel, & Cavusoglu, 2007) but significantly less than 88.9% of the Chinese food producers (Bai, Ma, Yang, Zhao, & Gong, 2007). All of the Serbian meat enterprises responded that they had first adopted ISO 9000 and then moved to the implementation of HACCP because they found this to be easier way to get full operation of the HACCP system in their plants.

The respondents were asked to indicate how long it took from their starting to implement HACCP system to fully operating one (Table 3). Almost 50% of the Serbian meat industry sample estimated that it had taken 12 months or less to implement HACCP system, while only 11.7% estimated that it took more than that. This

Table 3

Time that survey respondents needed for the implementation of HACCP systems ($n = 77$).

Time for implementation of HACCP systems	Number (%)
Less 3 months	2 (2.6%)
3–6 months	16 (20.8%)
6–12 months	20 (26%)
Over 12 months	9 (11.7%)
No answer	30 (39%)

Download English Version:

<https://daneshyari.com/en/article/6393048>

Download Persian Version:

<https://daneshyari.com/article/6393048>

[Daneshyari.com](https://daneshyari.com)