



Total quality management – penetration presumption on world market of animal products

K. Zmaić, R. Lončarić, T. Sudarić

University of J.J. Strossmayer, Faculty of Agriculture in Osijek, Department of Agroecconomics, Osijek, HR-31 000 Croatia

ABSTRACT

Animal production in the Republic of Croatia is in unfavorable position considering loss of traditional market and demand decrease on domestic market what affects unused production factors. Such situation requires creating of essential conditions and presumptions for growth of animal production export, regarding terms of strong global competition and technological development. Adoptions of quality and security systems are factors and priorities of competitiveness. It presents important role in reaching aims considering importance of international competition in introducing of global quality management. Quality management and security system of animal products presents system management approach for increasing values for consumers by creating and constant improvement of organization processes and systems. Introducing of HACCP system and good production practices as well as ISO 9001 are complex international standards related to specification of management system and process. Processors should adopt those standards in order to insure constant quality improvement as presumption for distribution of animal product to European and world market. Therefore, producers and processors in Republic of Croatia regarding quality management and security of animal products are at the beginning of this process, what requires more intensive and responsible adopting of international standards.

(Keywords: global competition, international standards, TQM, quality costs)

INTRODUCTION

Entering 21st century is reflected in higher globalization of world market on the one hand, and on the other in faster development of higher technologies. Croatian agrarian structure is connected with terms of tough business condition and realistic possibilities. Croatian agriculture has a task of strategic direction for creating short-term profit as well as terms for more stable and successful long-term development. Agrarian structure of transition countries barely started to deal with those business conditions due to loss of previous markets and decreasing demand on present domestic market. Necessary reforms for sustainable economic development in Croatia are not applied completely, so the transformation to modern competitive economy is required considering international business and global competition. One of the most important presumptions is approach to quality, which was connected to product at the beginning and lately it presents processed approach to quality and methods of Total Quality Management (TQM). It is in line with FAO and WTO requirements considering reforming of global food technology systems through modern technologies and increasing of food trade. Those great changes will provide improving of nutrition and sufficient amount of biologically valuable animal products. Complete fulfilling of

international norms means only establishing necessary and good basic for gradually achieving of success business. Success business today is the aim of leading producers of animal products who must provide all requests of capital owners, buyers, suppliers, employees and social community. It is possible to achieve with assistance system and constant improving of higher complete quality. Constantly improving of total quality requires effective management connected with business issues and necessity of TQM. Systematic and efficient development of TQM is possible to achieve by applying business success model regarding establish of balanced business entities effect. Modern and adaptable system of modern management must provide fulfilling of ISO norm connected with management system, selected model of business success and self evaluation as well as adopting of prevented measures of self control (complex HACCP system).

MATERIALS AND METHODS

Managing animal product quality is group of all firm's activities in order to provide buyers demands regarding quality and norms. Correctly created and applied ISO system for quality providing and management brings internal and external direct and indirect gains (*Injac*, 2002). Implementing of quality system is important for firms searching position on international market. Therefore, in the paper will be presented results of researching conducted in the Republic of Croatia on representative sample of firms implementing ISO norms and HACCP system. Following criteria of stratifications are used: firm size, activities and regions. Collected data were analyzed according to SPSS and compared to similar results of *Bešker* (2001), *Sikavica* and *Bahtijarevic-Šiber* (2004), *Drljača* (2003).

RESULTS AND DISCUSSION

Animal production represents strategic branch of improving and development of agriculture production. It is very important considering position in value structure of agriculture wealth and total national wealth. Productivity system of animal products must be adopted according to changeable environment providing quality system applying and market performances.

Table 1

Changes of animal production from 1986 to 2005 in the Republic of Croatia

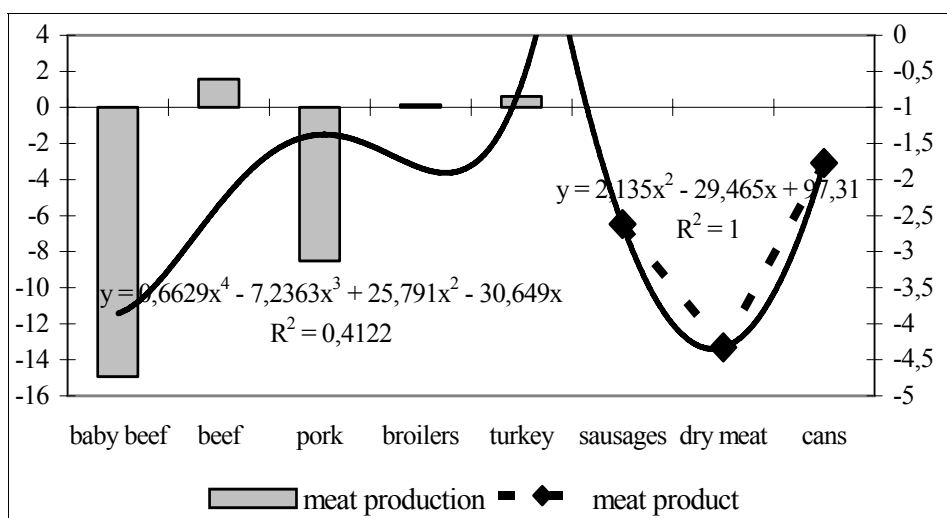
Products	Average value		Variation Interval		Parameters		
	X_{\min}	X_{\max}	s.d	R^2	F	Annual rates	
Growth (000) tones							
Beef	90,27	54	144	33,17	0,82	60,35	-5,05
Pork	202,87	163	271	40,87	0,68	28,27	-2,55
Sheep	8,73	5	13	2,60	0,26	4,55	-0,75
Poultry	98,07	67	120	18,96	0,28	5,00	-0,76
Product u (000)							
Milk (l)	748,87	588	1013	171,2	0,77	45,33	-3,17
Wool (t)	536,87	351	764	151,2	0,71	31,13	-3,16
Eggs (piece)	914,33	804	1096	109,4	0,78	46,47	-1,74
Honey (t)	947,8	627	1398	236,2	0,60	19,40	3,39

Source: *SLJH*, 1993 and 2003: 223., 240.

Total livestock growth in 2005 was 1.5 times lower compared to 1986. Average annual decreasing rate of livestock growth volume was 2.62%. The highest growth decreasing was noticed for beef (average decrease rate 5.05%) and lowest for sheep (0.75%). The lowest average annual decreasing was registered for eggs production (1.74%) whence honeys production was the only positive production volume (annual rate 3.39%). However, production of final animal products was constantly increasing as a result of increasing of domestic demand as well as export possibilities. Furthermore, the final livestock production was increased by average rate of 1.42% as a lower growth compared to total final agriculture (1.7%) and plant production (1.57%). Meat production, especially beef meat has the highest decrease (47.36%) and average annual rate was 14.93% as a consequence of forbidden export of live beef (foot disease, BSE) and pork (rate -8.51%). This trend is result of war (decrease of fertile animals), enormous import, weak export and decreased consumption of mentioned meats. Positive trend (from 0.6 to 6.5%) was noticed for beef, poultry and turkey meat were per average annual rate from 0.14 to 1.58%.

Figure 1

Meat production and meat products from 1995 to 2005



Production of animal product shows increasing trend by annual rate from 1.77 to 2.62%. Reasons causing this trend are decreased domestic animal production, low protection of domestic production (tariffs and quotas) as well as insufficiently defined direction of TQM development and adoption in slaughtering meat -processing industry. It caused high import of meat and products. During globalization, firms involved in animal production are faced with unfavorable position of tough competition, because demanding conditions cause strategy of stable and successful long-term development. Therefore, creating of condition towards higher quality and labor productivity, cost decreasing and export increasing is very important because only simultaneous orientation on consumers and concurrent insure permanent market success. European Union adopts quality systems according to international ISO standards involving TQM

principles. Arranged standards represent documents, which set up business systems and provide higher quality level. Aims of introducing quality systems are:

- Completely setting of business systems and subsystems,
- Profit increasing,
- Cost decreasing,
- Achieving higher level of product quality,
- Providing quality management from idea to post-consumption,
- Penetration of business system to world market,
- Possibilities of increasing sell price according to quality,
- Decreasing of cost price caused by decreased quality costs,
- Accomplishing market demands.

ISO norms in the certificate form insure permanent approach of animal production to international market, what is very important for Croatian firms. In fact, Croatia tries to adopt fact that process to accomplish successful firm business is via quality development and system quality. Numerous Croatian firms are in standard preparing phase, while only 792 firms in 2005 had certificates, meaning process of introducing model and quality system is on the beginning.

Table 2

Number of certificates according to ISO norms in Croatia

Years	Certificates (N)
1996.	11
1997.	17
1998.	21
1999.	33
2000.	35
2001.	74
2002.	97
2003.	152
2004.	195
2005.	157

The greatest certificate share is related to biggest Croatian firms are exposed to competition for gaining better position on international market. Dynamical increase of certificates it following years can be expected considering Croatian commitments regarding accessing European Union. Research results in Croatia in 2000 and 2001 (*Drljača*, 2003), show connection between business success and quality what affects:

- Increase firms with certificate,
- Share of firms with certificate among the most successful exporters is higher than among the most successful importers,
- Significance and role of standardization and quality is higher in production compared to unproduction economy branches.

206 firms were analyzed in order to define attitude of producers and processors of animal products about adoption of managing quality system according to ISO norms. 56 firms or 27% from total sample adopted ISO quality system and 14% takes consultations regarding quality norms.

Table 3

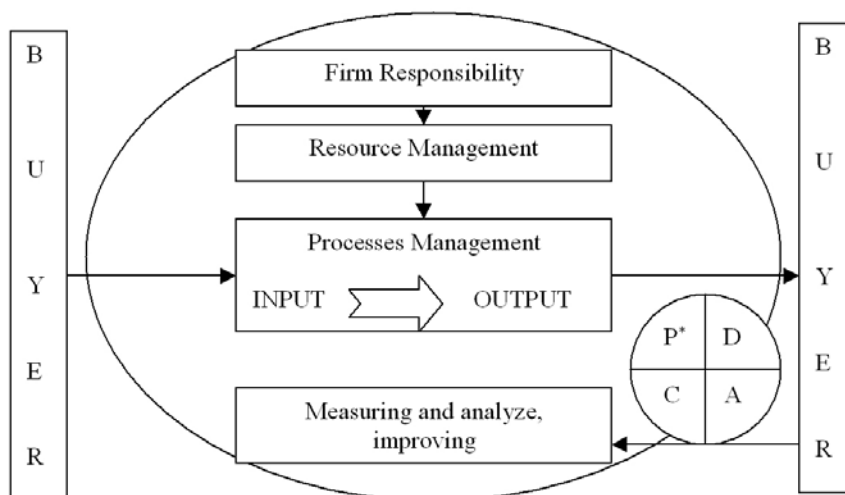
Structure firms according to implementation ISO norms

	Number	Structure	ISO certificates	ISO consultations
Processing industry	183	89 %	27 %	14 %
Agriculture and forestry	19	9 %	6 %	2 %
Fishery	4	2 %	6 %	4 %

4% agricultural firms confirmed positive attitude in introducing ISO norms and certificates because 22% conduct preparations and 32% take consultations. Economic activities were grouped according to χ^2 test about independences of criteria and hypotheses about firm dependence were accepted regarding applying quality systems. Based on results, 65% with certificates are from industrial activities and 49% has positive attitude concerning introducing quality system. With aim of more success penetration to world market mentioned firms must adopt TQM. Takes in consideration responsibilities of all processes in system: management of resources and processes, measurement and improvement analyze. Thereby all mentioned processes are connected to vertical and closed model improving TQM structure.

Figure 2

Total Quality Model in Animal Production



* P - plan, D - do, C - check, A - act

All these activities were conducted aiming customer's expectations fulfilling. Measuring, analyze and improving is important in order to bring feedback to management confirming and approving changes and taking improving actions. Horizontal line in model represents significant of consumer role regarding input data processes, sets requirements and feedback as an important element for permanent business improvement.

CONCLUSION

New experiences and requirements are directed towards quality system, which must be developed in order to insure product quality involving all function and all employees. Quality insurance needs to be achieved via connected suppliers and producers. Modern customer's request is high quality and improved product. All mentioned above leads to conclude that Croatian firms involved in production and processing of animal products need to adopt following principles:

- Modern market is consumer market not producer market including all consequences and new requests.
- Product quality is in the interaction with other two factors. Price and supply dates as well as quality show extremely non-elasticity regarding market adoption.
- The fundamental goal of animal production should be customer satisfaction, for without satisfied customer, there is no long-term business. To achieve customer satisfaction requires going beyond customer expectations and providing products that never disappoint the customer.
- Term of partnership in modern business is fulfilling universal request concerning quality according to international norms. Knowing importance of transformation regarding higher phases of quality improvement, defining quality politics as well as graduallity and permanence is crucial for all activities in Croatian economy in order to join development world.

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Corresponding author:

K. Zmaić

University of J.J. Strossmayer, Faculty of Agriculture in Osijek,

Department of Agroeconomics

HR-31000 Osijek, Trg. Sv. Trojstva 3 Croatia

e-mail: kzmaic@pfos.hr