

PROTECTION METHODS OF SWINE MEAT CONSUMERS

ROTARU MIHAELA ALEXANDRA¹, PETROMAN IONUȚ MIRCEA¹,
HĂDĂRUGĂ NICOLETA², PETROMAN CORNELIA^{*1}

¹University of Life Sciences "King Mihai I" from Timișoara,
Faculty of Management and Rural Tourism, Timișoara, Romania

²University of Life Sciences "King Mihai I" from Timișoara,
Faculty of Food Engineering, Timișoara, Romania

*Corresponding author's e-mail: c_petroman@yahoo.com

Abstract: Government bodies, through agri-food policies, aim to ensure to consumers from the meat market, the access to a variety of foodstuffs at competitive prices, which support their interests through laws and measures, including the right of representation in bodies on the product but also in the development new products according to market trends. The production, processing, distribution and utilization systems must face the specific problems of obtaining quality meat, with good hygienic properties, which satisfy the nutritional needs of consumption and health, offering safe products, without contaminants, obtained in a hygienic and safe environment managed regarding the use of nutritional resources. Providing safe products makes the consumer feel protected by rights, because they do not present physical and health hazards, satisfying consumers in terms of the quality and safety of their consumption.

Key words: swine, meat, protection, consumers

INTRODUCTION

Classic and alternative intensive production systems involve the clarification of specific problems of obtaining quality swine meat that will satisfy the nutritional needs of consumers and provide them with safe food without contaminants and diseases [1,2,10,17,18]. For the protection of swine meat consumers, production systems must be efficient and produce because:

- farms are considered efficient factories of safe products that use resources efficiently, swine being exploited:
 - a. in a hygienic and safe environment managed by well-trained and competent people; [5]
 - b. have good growth rates;
 - c. are fed high quality diets; [3,19]
- farmers try to maximize productivity to maintain profitability because if a farm is not profitable, there is no money to invest in improved facilities and equipment, regardless of the management system - internal and external; [4,20]
- not all farmers adopt the same techniques to produce their product, but in order to stay in business, the farm must be profitable and sustainable;
- today's markets have strict product specifications for the type of product they need and farmers / managers work to meet these specifications:
 - regular supply, which means that farmers must plan the production pattern of their enterprise to meet market demands for a whole year cycle;
 - niche market requirements, such as swine farmed in alternative intensive outdoor or organic systems, which require a special contribution from the farmers serving them;
 - quality product confirmed by a quality assurance program: processors and consumers demand safe food, free of contaminants and diseases;
 - strict carcass weight and fat specifications with heavy penalties for carcasses outside the sweet spot on the price grid;
 - safe products to protect consumers on the market.

In order to ensure consumer protection, intensive swine breeding and exploitation systems versus rearing systems in alternative swine production systems, we consider that the following aspects must also be taken into account: [6,13,21]

- consumer expectations regarding the quality and safety of meat in terms of swine meat and swine meat products according to three main criteria:

- meat accessible to consumers;
- meat favorable to well-being;
- safe meat in terms of quality and human health;

- consumer expectations regarding the purchase price, expectations revolve around:

- the cost of meat;
- the taste of the meat;
- nutritional level;

- consumer expectations regarding how to obtain meat, ideas range from increased use of classic intensive technological systems to greater use of organic farming systems: in reality, we need all production methods; [10,14,16,22]

- consumer expectations regarding the uncertainty of swine meat production, as the human population increases and the effects of climate change, specific viral diseases;

- consumer expectations regarding the safety of swine meat consumption, discussions are moving towards food security and how consumers will be fed;

- consumer expectations regarding all food production systems that must [7,11]:

- to take care of the welfare of the animals;
- take care of the environment;
- to ensure profit and sustainability;
- to function within the community culture;
- involve people;
- to ensure their protection.

- consumer expectations in choosing a food diet, because some consumer groups even support a change of diet to vegan or vegetarian diets, but in reality consumers, for their protection, choose the diet that best suits their health needs and accessibility to certain products. In this way, another problem is brought to the attention of consumers when choosing diets [8,12], namely the one of consumer protection in the case of the consumption of swine meat marketed as an organic product.

Other researchers [9,15] present a review of legal issues related to cases of distribution of food containing swine meat and conclude that dispute resolution between consumers and business actors in different regions produces legal certainty different in cases of food distribution and that it is necessary to encourage the use of the non-contentious dispute resolution institution so that consumers can improve the selection, determination and claim of their rights as consumers.

MATERIALS AND METHODS

Swine meat consumers, in order to meet their expectations in choosing of food diet, regarding the quality and safety of consumption, have the right to protection, in ensuring the necessary proteins of animal origin, for these reasons within the framework of this scientific approach, using known economic methods and policies, or made research, regarding the observance of the rights to support the interests of consumers in order to receive full and sympathetic appreciation in the execution of the economic policies of production, processing and valorization of meat on the market, in the development of new products sufficient and safe for human health and accessible as price.

RESEARCH RESULTS

The rights of the consumer apply including to the consumer of swine meat and are manifested by:

- the right to choose from the products offered by farms the one considered to satisfy his expectations is:

- the consumer's right to ensure, whenever possible, access to a variety of goods at competitive prices:

- to select and buy the product he chooses from a number of available products;

- to select in terms of quality and price;

- in the absence of a variety of goods at competitive prices, the consumer has no choice but to buy the available product, which allows the trader to:

- will affect the flow of goods on the market;

- prices will rise;

- it will create an artificial shortage;

- he will fix the price that suits him;

- manipulate delivery conditions;

- the right to be heard:

- is the right to support the interests of the consumer in order to receive full and sympathetic consideration in the formulation and execution of economic and other policies – including the right to representation in government and other political bodies, as well as in the development of products before they are manufactured;

- it means that any consumer has the right to be heard, to express his point of view in different forums and/or within decision-making bodies;

- merchants, public and private enterprises that supply goods, service providers, producers of goods, have the responsibility to give consumers the opportunity to be heard:

- consumers must have access to Government to express their views on important issues;

- institutions that provide services to consumers may have a consumer complaint resolution cell;

- production units may have customer service centers;

- the right to education:

- is the right to acquire the knowledge and skills necessary to be an informed consumer throughout life;

- includes the right to the knowledge and skills necessary to influence the factors affecting consumer decisions;

- requires a type of education to help the consumer:

- will become a better citizen;

- will become a wise shopper;

- will become a better manager of resources;

- he will be more aware of his quality as a consumer;

- he will make the right decision;

- he will understand what his role is in the market economy;

- he will understand the legal system that can help him exercise his rights;

- will develop self-confidence;

- involves educating the consumer in relation to:

- consumer protection agencies and organizations, relevant legislation, how to obtain compensation;

- product labeling;

- food adulteration, nutrition, foodborne illness prevention, health;

- information about quality, credit conditions, availability of basic products, weights, measures, prices;
- environment and pollution;
- the dangers produced;
- presents a number of benefits:
 - acquiring the knowledge and skills needed to be an informed consumer throughout life;
 - acquiring life skills;
 - formation of critical thinking;
 - improving the degree of understanding;
 - the right to information:
 - is the right to obtain correct and adequate information about all goods and from any public authority, in order to make informed choices and make informed decisions;
 - involves informing the consumer about:
 - consumer protection agencies and organizations, relevant legislation, how to obtain compensation;
 - product labeling
 - food adulteration, nutrition, foodborne illness prevention, health;
 - information about quality, credit conditions, availability of basic products, weights, measures, prices;
 - environment and pollution;
 - the dangers produced;
 - implies the right to:
 - to have access to issues that directly affect the lives of citizens;
 - have access to the Government's social assistance schemes;
 - to know the harmful effects of consumer products, if applicable;
 - not to be misled by inaccurate advertising;
 - obtain information regarding the quality, quantity, composition, potency, prices and purity of the goods offered for sale;
 - obtain detailed information about the products to be purchased;
 - obtain all kinds of information to make a wise choice about the products of interest, requires specific means of information: labels, printed information media, an advertisement, official registers of public and private enterprises.
- the right to compensation - is the right of consumers to ask for compensation;
- involves one or more of the following reasons for dissatisfaction:
 - o the purchased goods are defective;
 - o the merchant adopts unfair or restrictive commercial practices;
 - o the merchant asks for a price that exceeds the price displayed on the goods or package, the price displayed on the price list or the fixed price;
 - o the trader offers for sale goods dangerous to the life and safety of the consumer;
 - o the trader offers for sale the services dangerous for the life of the consumer;
 - o the services are deficient;
- involves one or more repairs by the trader:
 - o correction of the defect / defects;
 - o elimination of the defect / defects;
 - o cessation of unfair commercial practices;
 - o replacement of the defective good with another without defects;
 - o payment of damages;
 - o withdrawal from sale of dangerous goods;

- o returning the price paid by the consumer;
- the right to meet basic needs and the cost of providing basic food and drinking water to guarantee survival. This involves implementing measures regarding:
 - o food safety, including safety criteria, food standards and food requirements, effective monitoring, inspection and evaluation mechanisms;
 - o food standards of the Food and Agriculture Organization, the World Health Organization, Codex Alimentarius or generally accepted international food standards;
- the right to safety, is the right to be protected as a consumer against products and processes dangerous to health or life related to the product that:
 - must not present any physical danger, any health hazard or put the consumer in difficulty;
 - must not cause damage to the consumer;
 - must satisfy the consumer in terms of its quality and safety;
 - involves safety measures:
 - o the formulation of policies for the compensation of defective products by manufacturers;
 - o provision of facilities for testing and certification of essential goods;
 - o establishing measures and standards to ensure the safety and quality of goods;
- the right to a healthy environment is the right to a physical environment, as a source of food, which improves the quality of life and includes:
 - protection against environmental hazards as a food resource, over which consumers have no control;
 - the need to protect and improve the quality of the environment, for the present and future generations.

Swine meat consumers are concerned about foodborne disease outbreaks and the economic consequences for the market and consumers. Some new technologies will increase meat production and make food safer, but their utility and safety must be demonstrated to be accepted by consumers. Most food safety regulatory systems were based on legal definitions of unsafe food, enforcement programs to remove unsafe food from the market, and penalties for responsible parties after the fact. These traditional systems cannot respond to existing and emerging food safety challenges because they do not provide or encourage a preventive approach. In the last decade, there has been a transition to risk analysis based on better scientific knowledge of foodborne illnesses and their causes. This provides a preventive basis for regulatory measures for food safety both nationally and internationally. The risk-based approach must be supported by information on the most appropriate and effective dangers transmitted through food.

For these reasons, we conclude that swine meat consumers can and must be protected by food safety measures, from the following aspects that we encounter on the market:

- food adulteration consisting of:
 - falsification of spices and sausage products;
 - the use of colors to mask the quality of the products;
 - they can have a strong impact both on the family budget and on the health of consumers;
 - can lead to health hazards;
 - can lead to financial losses for the consumer;
 - arouse public outrage and anger because they violate public trust in the integrity of the food supply;

- new foods:
 - could have less predictable consequences compared to those produced by traditional methods;
 - creates problems in terms of environmental impact, nutrition and food safety;
 - may call into question the safety, nutritional value and environmental effects of bioengineered foods.
- the dangers of contamination
 - a. the chemical contamination of the meat originates from:
 - contamination with dioxins entering the pig food supply;
 - contamination with heavy metals that can enter the meat through soil, water or materials in direct contact, as well as other environmental contaminants;
 - residues of veterinary drugs, substances in food with estrogenic activity, etc.;
 - mycotoxins of biological origin produced by certain species of mushrooms – aflatoxins, zearalenone – which contaminate the raw materials used in pig nutrition;
 - the misuse of pesticides during food production and storage, which leads to unwanted residues;
 - misuse of food additives;
 - These chemical agents can lead through the consumption of contaminated meat to acute or chronic diseases, certain forms of cancer, immunotoxicity, food intolerances and allergies, disruption of the endocrine system, being:
 - are a significant source of foodborne diseases;
 - they have effects that are difficult to link to a certain food and can appear long after consumption, microbiological contamination of meat obtained from pigs:
 - continues to grow;
 - generate considerable costs;
 - involves pathogens:
 - o bacteria: *Campylobacter jejuni*, *Clostridium botulinum*, *Escherichia coli*, *Yersinia enterocolitica*;
 - o protozoa: *Clonorchis sinensis*, *Cryptosporidium parvum*, *Toxoplasma gondii*;
 - o viruses: classical and African swine fever, hepatitis A;
 - persists because our ability to control pathogenic organisms has decreased due to:
 - o the growing demand for fresh food;;
 - o the industry's difficulties in controlling hazards during production;
 - o lack of hazard control at farm level;
 - o modified ways of producing, preserving and packaging food;
 - o modified production practices;
 - o extending the shelf life for many foods;
 - o the trend towards minimal processing of food products;
 - represents a growing cause of morbidity in all countries;
 - represents a major cause of increased preventable morbidity and mortality and economic burden for producers, processors and traders.

CONCLUSIONS

The protection of swine meat consumers requires that the production systems are efficient and produce, throughout the meat chain, safe products using nutritional resources efficiently, in a hygienic and safe environment managed by well-trained and competent people regarding quality conditions because markets have strict specifications for the type of product, they need to meet the needs and safety of those who purchase them.

In order to ensure the protection of consumers of meat from the pig species, classic and alternative production systems must also consider market trends and ensure quality meat in safe conditions and prevention of chronic and acute diseases.

Swine meat consumers can and must be protected by food safety laws and measures, from the dangers of chemical contamination of meat along the supply chain, production, processing, distribution and utilization, and microbiological with pathogens, bacteria, protozoa and viruses, due to the lack of control over the entire meat flow, due to the high demand for fresh meat and the trend towards minimal processing of swine meat products.

REFERENCES

- [1]. **DANCIU G., PANICI G., PETROMAN CORNELIA, MARIN DIANA, DUMITRESCU CARMEN, PETROMAN I.**, 2018, The role of farm management in reducing the interval from weaning piglets to conception, *Journal of Biotechnologies*, 280, pages S37
- [2]. **FAN VWEN**, 2017, Education and Decision – Making: An Experimental Study on the Framing Effect in China, *Frontieres in Psychology*, vol.8
- [3]. **HARRIS D. L.**, 2000, *Multi-site Pig Production*, Iowa State University Press
- [4]. **HEBER LOREDANA, PETROMAN CORNELIA, PETROMAN I., BĂLAN IOANA, MARIN DIANA, IVAȘCU GABRIELA, POPOVICI C.**, 2011, Pork and carcasses quality in swine exploited in family farms, *Scientific Papers Animal Science and Biotechnologies*, 43, 406-408
- [5]. **HERMANSEN J. E., AARESTRUP LARSEN VIVI, ANDERSEN BENT HINDRUP**, 2002, Development of organic pig production systems, *Perspectives in Pig Science*. Loughborough: University of Nottingham
- [6]. **ENGEL J. K., BLACKWELL R. D., MINIARD P. W.**, 1990, *Consumer Behaviour*, Sixth Edition, The Dryden Press
- [7]. **KATSUMATA M., KAJI Y., SAITOH, M.**, 1996, Growth and carcass fatness responses of finishing pigs to dietary fat supplementation at a high ambient temperature. *Animal Science*, 62, 591-598
- [8]. **MARIN DIANA, PĂCALĂ N., PETROMAN I., PETROMAN CORNELIA, UNTARU RAMONA, DRAGOȘ LAURA, ȘANDRU O.**, 2011, Study regarding the favourable factors that influence swine production, *Lucrări științifice Management Agricol*, 13(2)
- [9]. **MARIN DIANA, PĂCALĂ N., PETROMAN I., PETROMAN CORNELIA, UNTARU RAMONA, CIOLAC RAMONA**, 2012, Influence of age and weight at slaughter over meat quality in conditions of optimum ambient temperature, *Lucrări Științifice Management Agricol*, 14(4), 453-458
- [10]. **MARIN DIANA, PETROMAN CORNELIA, PETROMAN I., BĂLAN IOANA, TOADER COSMINA, CIOLAC RAMONA, HEBER LOREDANA, FURDUI. I.**, 2010, Distribution of pig livestock by development region in Romania, *Scientific Papers: Animal Science and Biotechnologies*, 43(2), 416-419
- [11]. **NEAGU IULIANA, CULEA C., PETROMAN I.**, 2007, *Creșterea animalelor*, Editura Eurostampa, Timișoara
- [12]. **PANICI G., PETROMAN I., PETROMAN CORNELIA, MERCE IULIANA, CIOLAC RAMONA, MARIN DIANA**, 2017, Management practices used to reduce the impact of seasonal infertility on sow productivity in Romania, *Journal of Biotechnology* 256, S49
- [13]. **PETROMAN CORNELIA, PANICI G., PANDURU E., MARIN DIANA**,

- VĂDUVA LOREDANA, PETROMAN I., 2019, New possibilities for improving the environmental management risk in swine farms. *Journal of Biotechnology*, 305, S74
- [14]. PETROMAN CORNELIA, PETROMAN I., NEGRUȚ V., MARIN DIANA, CIOLAC RAMONA, VĂDUVA LOREDANA, 2013, Frequency of consumption of meat and meat products in Timis county, *Scientific Papers Animal Science and Biotechnologies*, 46(2)
- [15]. PETROMAN CORNELIA, 2016, *Procesarea materiilor prime agricole*, Editura Eurostampa, Timișoara
- [16]. PETROMAN I., CULEA C., NICOLAE M., PETROMAN CORNELIA, 2002, *Creșterea porcinelor*, Editura Mirton, Timișoara
- [17]. PETROMAN I., 2007, *Managementul sistemelor de creștere și exploatare a animalelor*, Editura Eurostampa, Timișoara
- [18]. PETROMAN I., UNTARU RAMONA CALIOPI, MARIN DIANA, 2013, Breeding season influence of sows gestation loss, *Journal of Food Agriculture and Environment*, 11(2), 305-307
- [19]. PETROMAN I., VARGA MELANIA, CONSTANTIN ELENA CLAUDIA, PETROMAN CORNELIA, MOMIR B., TURC B., MERCE IULIANA, 2016, Agrotourism: An Educational Tool for the Students with Agro-Food Profile, *Procedia Economics and Finance*, 39, pg. 87
- [20]. ROMANIAN PORK PATRONATE - Informative Bulletin, no. 15-32
- [21]. VĂDUVA LOREDANA, 2013, The influence of endogenous and exogenous factors on meat quality of pigs, *Scientific Papers Animal Science and Biotechnologies*, 46(1), 404-406
- [22]. VĂDUVA LOREDANA, 2013, The influence of operating system on food and water consumption of fat pigs, *Scientific Papers Animal Science and Biotechnologies*, 46(2), 428-430