

NEW POSSIBILITIES FOR IMPROVING SWINE MEAT CONSUMPTION

ROTARU MIHAELA ALEXANDRA¹, BOGOȘEL FLORIN DANIEL¹,
ȚÎRLEA IOANA CRISTINA¹, MARIN DIANA¹, PETROMAN CORNELIA^{1*}

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

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

Abstract: *In order to improve the consumption of swine meat, it is necessary for production, processing and distribution units to control the influence of technological factors in order to obtain quality products or brands according to the trend of consumer preferences on the market. A wide variety of consumer attitudes and beliefs are revealed in the purchase of swine meat, as being strongly dependent by the culture and influenced by information provided about the obtaining method, welfare conditions and possibilities for quality improvement. In order to implement profitable nutritional methods of manipulating meat quality to stimulate consumption, there is a need for special measures to pay for carcasses obtained from swine based on quality, methods of certification and payments for the use of improved nutrition programs and the use of superior genetics for meat procurement, aimed at increasing sustainable food choices.*

Key words: *swine, meat, consumption*

INTRODUCTION

The basis of the demand for swine meat is a pattern of consumer behavior that has a set of preferences and values whose determination has nothing to do with economics but with culture, education and individual tastes. The value of a certain product obtained from swine, lies in the real opportunity cost for the consumer who buys and consumes that good. If a person buys a particular product, then the opportunity cost of that purchase consists of the lost goods that the consumer could have bought instead. [4,12,13,19] The consumer makes decisions by allocating limited income to all possible goods to obtain the greatest satisfaction–utility. In other words, the consumer maximizes his utility subject to the budget constraint. [3,6,15]

Consumption value is measured in terms of relative utilities between goods, which reflect consumer preferences, for swine meat and swine meat products, defined as individual/subjective tastes measured by utility of different bundles of goods. Consumer preferences allow consumers to classify bundles of goods according to utility levels and are independent of income and prices in the sense that it can be preferred swine organically raised but only have the financial means to buy swine raised in industrial system.

It is interesting to note that over the past two decades, at least at the declarative level, swine meat consumers have been increasingly concerned with animal welfare rather than other considerations. Thus the researchers [5,11,17,20] determined:

- the prevalence of concern for the welfare of farm animals;
- reasons for greater concern in some consumers compared to others. Other researcher has focused on consumer attitudes towards swine rearing and farming and concern for swine welfare in order to identify areas that may contribute to increased consumer concern for welfare. Research has shown that farm animal welfare concern, swine farm welfare concern and reported willingness to pay extra for higher welfare pork products are influenced by:

- consumers' attitude towards swine;
- awareness of swine production methods;
- previous exposure to a conventional swine farm;
- the level of education of consumers.

To increase concern for the welfare of swine on farms and, by implication, to increase the demand for better welfare swine products with the aim of improving consumption, campaigns are needed to clarify the production methods used in conventional meat production systems of swine meat, cross-national research regarding the interest of consumer of meat to the impact, safety, health and welfare of animals in modern swine production. With the exception of one criteria related to animal welfare, those production characteristics that consumers perceive as most important are related to health and safety aspects rather than animal welfare and the environmental impact of swine farming. Other studies [1,10,22] provide an overview of consumer attitudes and beliefs regarding swine welfare and swine quality, but also how they influence consumption. In terms of animal welfare, several aspects of farm management and practices were considered, with an emphasis on pain control management alternatives such as whole male production, castration with anesthesia and immune-castration. [2,7,9,14,16]

For meat quality and to stimulate the consumption of meat and swine meat products, aspects of sensory quality, especially those related to the smell and taste of meat from non-castrated males, including meat produced in alternative ecological systems, should be analyzed. It is found that a wide variety of consumer attitudes and beliefs are revealed in the purchase, as strongly dependent on culture and influenced by the information provided – which can be used when producing and marketing swine meat and swine meat products, as well as when developing: [8,18,21]

- marketing strategies to reach different consumers;
- to stimulate the consumption of swine meat and swine meat products;
- to meet market requirements.

MATERIALS AND METHODS

In order to stimulate the consumption of meat and swine meat products, within this scientific approach, new methods of analysis of the production/processing factors that influence the quality of the meat were used, with special emphasis on the attributes of technological quality, which make it special compared to other meats. Models focused on comparing the effectiveness of different incentives and their combinations are proposed to increase sustainable food choices and stimulate through improved programs the consumption of meat and swine meat products.

RESEARCH RESULTS

Although production and processing technological factors can be used to control the technological quality traits of swine meat and swine meat products obtained by a given farm, most knowledge is based on research, which investigates the influence of one or at most two or three factors, quality, consumption and consumer orientation towards a specific farm product or brand because it is necessary:

- understanding how production and slaughter factors interact in relation to swine meat quality to provide a maximum number of tools to:
 - a. meat quality control;
 - b. consumer quality requirements;
 - c. tomorrow's meat consumption trends;
 - d. ways to stimulate consumption.
- a holistic approach to provide a general understanding of the influence of production, peri-and post-mortem factors on the quality of swine meat and swine meat products;

- exploitation of a new genetic type of commercial pigs, to satisfy consumer preferences, which forces:
 - a. meat science at a new renaissance regarding organoleptic properties;
 - b. control by modern methods of the influence of production and processing factors on meat quality:
 - c. adapting pork production to consumer needs to stimulate consumption.
- implementation of new classic and alternative intensive production systems that require parallel studies to prevent unforeseen negative effects on meat quality;
- the basic understanding of how muscle glycogen stores are influenced by genotype and feeding regime and the interaction with pre-slaughter handling could be the next major breakthrough in the technological quality control of meat that can stimulate consumption through the special properties of the products obtained by processing;
- nutritional manipulation of meat production using new nutrients to obtain quality meat that satisfies consumption preferences:
 - a. conjugated linoleic acid, for the fight against many diseases;
 - b. amino acids, and proteins to increase the degree of marbling;
 - c. betaine, for protein synthesis;
 - d. creatine, as a source of energy for muscles;
 - e. chromium, for potentiating the action of insulin and for increasing the rate of deposition of lean meat;
 - f. magnesium, to reduce the glycolytic rate triggered by stress hormones and antagonize calcium stimulation;
 - g. vitamin E, for increasing the oxidative stability of pork;

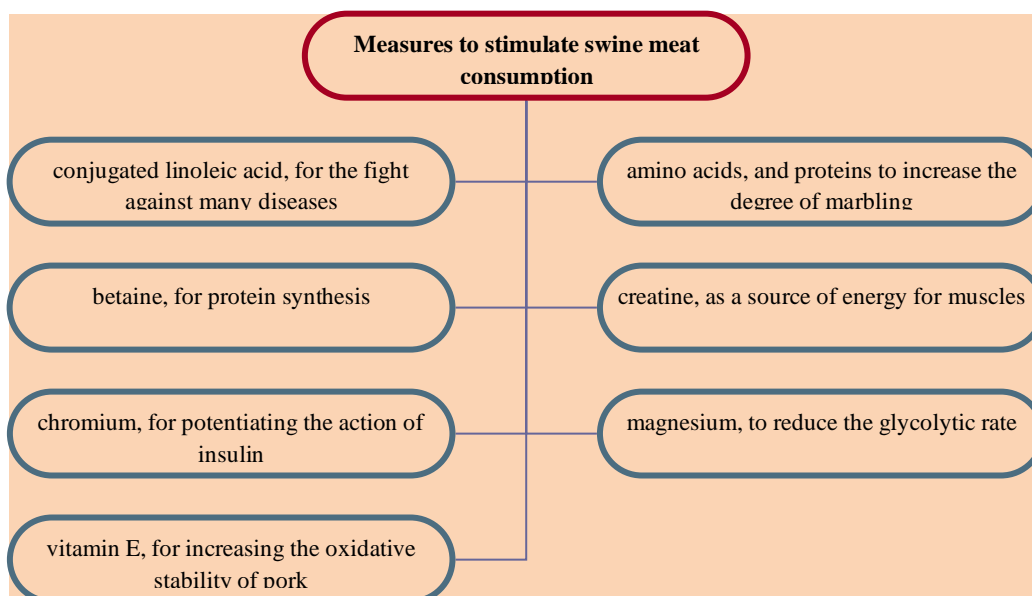


Figure 1. Measures to stimulate swine meat consumption

Source: own creation

In order to obtain quality meat to stimulate consumption, we propose several nutritionally profitable methods of handling the quality of swine meat, distributed on the market and satisfying the needs of consumers. Nutritional manipulations should only be used if producers receive a return on their investment. To do this, you need:

- a. payment of carcasses based on quality;
- b. a way to certify and pay producers for using improved nutrition programs;

c. the production of high-quality swine meat, using commercial hybrids specialized in meat production.

These results were also reached by consecutive studies focused on comparing the effectiveness of different incentives and their combinations aimed at increasing sustainable meat food choices. The compared incentives are the use of labels with descriptive names for:

- the most sustainable product from swine meat;
- the bait effect, created by adding a nutritional stimulus that makes meat more attractive;
- to increase the frequency of choice by consumers on the market: color, taste, smell, aroma.

It was found that these incentives influence the choices of meat by consumers and stimulate consumption, the results published in the specialized literature indicate that the combination of:

- a. labels with descriptive names of the meat;
- b. the decoy effect to promote sustainable food choices, as labels with pure descriptive names were more effective in increasing choice frequency, while the decoy effect resulted in decreased choice frequency.

Summarizing the favorable effects, of increasing swine meat consumption for market consumers, it is found that labels with regional descriptive names are the most sustainable, as shown in the table below:

Table 1

Desirable and undesirable aspects of swine meat sustainability

Desirable	Undesirable	Ambivalent
No nutrients	Additives	Fair trade
Regional	CO2 footprint	No genetic modification of the meat composition
Seasonal	Ecological footprint	Nutritional information
Animal welfare	Processing stress	Lactic acid in muscles

Source: own creation

We also propose other possible solutions to stimulate the consumption of swine meat quality by:

- the improvement of technological methods for obtaining carcasses and meat;
- ensuring antemortem well-being;
- avoiding stress in the stun aisle;
- shortening the period of stunning;
- maintaining optimal bleeding times;
- preserving the hygienic quality of the meat;
- compliance with the cooling conditions of the casings and the conditions of refrigeration;
- ensuring optimal storage conditions, to maintain the color of the meat;

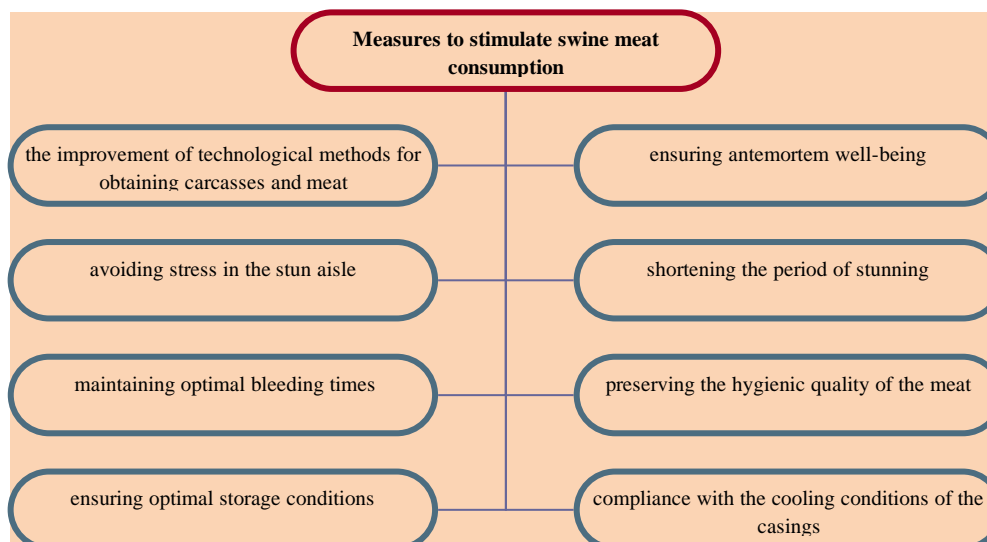


Figure 2. New possible solutions to stimulate consumption

Source: own creation

CONCLUSIONS

Obtaining quality meat by farms to stimulate consumption requires the use of profitable nutritional methods of manipulating nutritional quality through quality-based carcass payment measures, methods of certification of improved nutrition programs in the production of swine meat by superior quality, using commercial hybrids specialized in meat production.

The incentives that influence the choices of swine meat by consumers in the market and that improve consumption through favorable effects, are labels with descriptive regional names, being the most sustainable in increasing the frequency of choice. The new solutions to stimulate consumption are aimed at improving the technological methods of production, processing, distribution and utilization of meat, in order to maintain the organoleptic and hygienic quality of swine meat.

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