

METHODS FOR IMPROVING THE MANAGEMENT OF SWINE PRODUCTION SYSTEMS

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Abstract: Choosing the type of pork production management is made depending on the existing resources in the area, market needs, knowledge, training in the breeder's field, the ability to invest in the material base and the profitability of the system. The profitability of the production system is influenced by factors economic conditions, the price of fodder used for fattening, the evolution of the meat price on the market, human resource expenses, the price of energy and the achievement level of some technological parameters foreseen by the implemented farm management. Professional farms that have a technological flow and are integrated in the meat chain, if they have implemented the best production management, produce appreciable quantities of meat in economic conditions, if they produce their own biological material for fattening or procure it from the units of selection and improvement specialized in the production of commercial meat hybrids.

Key words: swine, farms, management, meat

INTRODUCTION

Swine meat production is carried out today in different production systems in different types of professional or non-professional farms integrated or not integrated in the meat chain. [15,16,19,22] These swine farms can be (Figure 1):

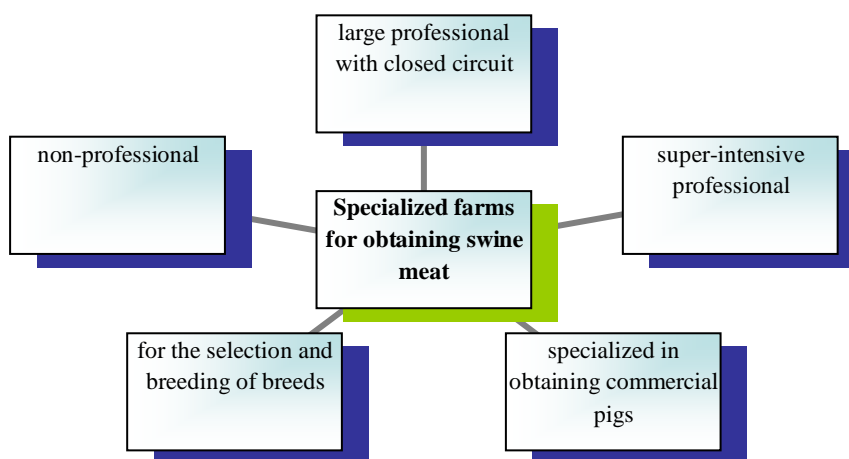


Figure 1. Types of specialized farms for obtaining swine meat

- non-professional, where they exploit: [1,3,14,21]
 - a. small number of fattened animals for self-consumption and the local market;
 - b. procures its genetic material from other producers;
 - c. the genetic material is adapted to exploitation in conditions of non-assurance of a balanced nutrition and the maintenance is done in improvised spaces;
- large professional with closed circuit, where exploitation is of industrial type;
 - a. have a sector of industrial reproduction, maternity, youth growth, fattening;
 - b. processes its production in its own slaughterhouses;
 - c. have their own distribution and utilization logistics. [6,7,9,12,17]

- super-intensive professional, where the pork production activity:
 - a. is foreseen;
 - b. good economic results are obtained;
 - c. production is integrated;
- specialized in obtaining commercial pigs. They produce small amounts of meat by slaughtering sows.
 - for the selection and breeding of breeds, used in the production of breeders needed for commercial hybrids. The quantities of meat obtained are small and result from the slaughter of animals that do not correspond to the selection.

Management policies of production systems must provide the increase of individual productions by implementing the best farm management and not the increase of herds, the orientation towards obtaining commercial pigs with good recovery yields, carcasses and quality meat to satisfy the consumption needs of consumers on the market and to increase the efficiency of exploitation. [2,4,8,10,18]

Professional farms through the integrated management of production, processing, distribution and utilization must be able to:

- to orient the productions in time according to the market demand;
- to produce meat at competitive prices;
- to improve its marketing management;
- to be able to directly exploit their production;

Marketing management will develop effective models for improving distribution and capitalization by presenting more effective short-channel capitalization solutions, stimulating capitalization through pricing, and aggressive promotion. Efficient distribution systems will be developed, using channel strategies if the production obtained is of quality:

- exclusivity strategy;
- the strategy of the selectivity of the places where the distribution is made;
- ubiquity strategy.

The targets to be achieved, recommended by the measures imposed by the integrated production management, depend on the forecasting of the production, the financial strength, the capacity of the farms to adapt to market demands and the quality of the carcasses and the meat obtained. [1,3,5,11,20]

MATERIALS AND METHODS

Regardless of the production system type of swine meat, it must undergo an analysis of the elements that compete economically for the organization of technological processes, the specialization of production, the profitability of exploitation through the effective capitalization of meat production on the market. Within this scientific approach, the aim of the research undertaken in professional swine farms integrated in the meat chain, was:

- analysis of meat production;
- achievement of technological indicators;
- finding solutions to improve sectoral management on meat sector;
- proposal for the implementation of the most cost-effective production system to ensure the achievement of the best technological indices in obtaining meat according to the financial strength of the professional farm and the needs of the meat market, which will make the farms performant.

RESEARCH RESULTS

Swine farms, to be economically efficient, must specialize in the following production systems in obtaining the main production, swine meat:

- integrated closed circuit production on the meat chain;
- open production circuit obtained in specialized farms for the production of commercial, fattening hybrids;
- closed or open professional or non-professional production that occasionally produce meat;
- alternative production with open circuit.

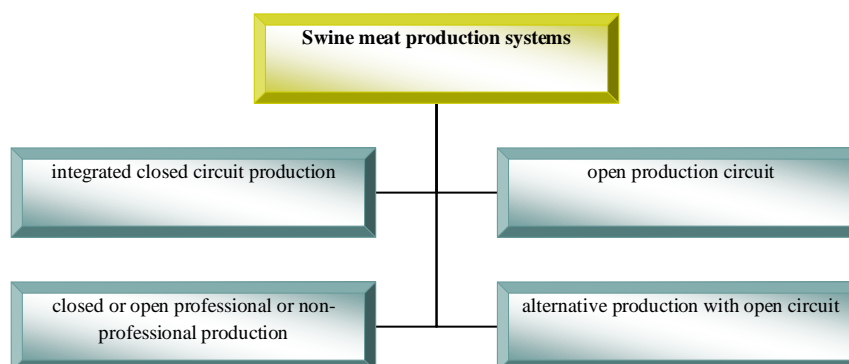


Figure 2. Swine meat production systems

To improve the management of swine meat production systems, are required analyzes to find the best solutions for choosing the most efficient system according to local human resources and their degree of qualification, market demand, breeder training and last but not least the financial power to invest in improving the material base also depending on the profitability of the system.

We believe that the profitability of the production system is influenced by economic conjunctural factors such as:

- the price of fodder purchased for fattening;
- the evolution of the market price;
- prices for utilities and for human resources;
- the level of achievement of the technological indicators.

We propose for implementation a system of integrated meat production in a closed circuit, with the following technical indicators expected to ensure profitability for the entire meat supply chain:

- the age of 185 days when the sows enter breeding;
- utilization index: 2.5 calvings/year;
- Service interval = period of preparation for insemination (7 days) + lactation period (28 days) + gestation (113 days) = 148 days
- non-productive interval of the sow: 10 days/year;
- birth rate: minimum 95%;

Birth rate: Sows inseminated/sows farrowed x 100

- live piglets/sow/year: 36 heads;
- weaned piglets/sow/year: 35 heads;
- fat pigs at the slaughterhouse/sow per year: 34 heads
- average delivery weight 100;
- quantity of meat delivered/sow/year: 3400 kg;
- fattening and finishing period 148 days;
- exits from the herd from birth to arrival at the slaughterhouse: 7%.

In order to achieve these technical indicators, integrated production management must ensure the best conditions regarding well-being, the most important being:

- biosecurity of farms and categories of animals;

- preserving the health of the human resource and communities in the area of these farms;

- veterinary health management, through which:
 - a. the administrative area is isolated from the production area;
 - b. ensure the transport of fodder and genetic material;
 - c. environmental pollution and the spread of diseases are avoided.
- resistance and comfort criteria by category of animals:

- a. shelters with control of microclimate factors;
- b. optimal spaces according to weight and age;
- c. balanced nutrition based on physiological states;

- criteria for normal behavior:

- rest;

- feeding and watering front according to the category;

- possibilities for organizing the booth;

- communication possibilities through grills with the neighboring speakers;

- microclimate criteria for fattening pigs:

In order to achieve these technical indicators, integrated production management must ensure the best conditions regarding well-being conditions, the most important being:

- biosecurity of farms and categories of animals;

- preserving the health of the human resource and communities from the area near these farms;

- veterinary health management, through which:
 - a. the administrative area is isolated from the production area;
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- criteria for normal behaviour:

- rest;

- feeding and watering front according to the category;

- possibilities for organizing the booth;

- communication possibilities through grills with the neighboring speakers;

- microclimate criteria for fattening pigs:

Table 1.

Microclimate criteria

No.	Item	Value
1.	Temperature depending on the season	14-16 °C;
2.	Humidity	60-75 %;
3.	Air current speed: Summer Winter	1,00 m/second; 0,50 m/second;
4.	Gas concentration: Carbon dioxide Ammonia Hydrogen sulphide	3,000 ‰; 0,020 ‰; 0,012 ‰;
5.	Ventilation rate m.c. /head /hour Summer Winter	80,0; 20,0

Source: processing by different authors

The achievement of these microclimate parameters in fattened pigs for the proposed production system will be done using:

- heating sources only at population in the nursery at the age of 25 days and 8-10 kg weight;
- at higher weights for youths weighing more than 22-25 kg, the hall is not heated;

CONCLUSIONS

Improving the management of production systems requires conducting analyses to choose the most effective technological solutions for the entire chain of production, processing, distribution and utilization of swine meat. Choosing the most profitable production system depends on the qualification degree of the human resource, the financial strength of the company to invest in the improvement of the material base and the demand on the swine meat market. The profitability of the chosen production system is also influenced by the conjunctural economic factors such as the price and the evolution of the prices of raw materials used to obtain feed, the expenses for utilities and human resources, but also the achievement level of the technological indicators expected to be achieved.

For the production system proposed to be implemented to be profitable, the integrated production management must ensure the best conditions regarding the welfare of the swine and good managerial practices of farm and animal biosecurity, preserving the health of the human resource, comfort resistance criteria, criteria for a normal swine behaviour and seasonal microclimate criteria.

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