

CHALLENGES FACING THE POULTRY BROILER MEAT INDUSTRY IN BIHOR COUNTY

Marinela Lidia BOLD

Loredana VĂDUVA

I. PETROMAN

***Abstract:** In order to meet the challenges and market trends, the poultry broiler meat industry must be able to adapt to the constant supply of meat according to the preferences of consumers in economical farming conditions without disturbing the health and welfare of the birds. Since most purchases on the agri-food market are not planned with a long period of time, the decisions to purchase broiler meat by consumers, being made even in the distribution unit, the decisions are characterized by one or more characteristics, spontaneity, emotion, indifference to consequences. Adapting the broiler industry to the behavioral types of consumers in the market are real challenges that depend on the ability of farms to meet consumer demands for a particular type of broiler products, the strength of products, brands to cope the cognitive capacity of the consumers and some situational factors but also the previous experiences in solving the choice or preference for a certain poultry broiler meat product. The global challenges facing the poultry broiler industry in the research area have limited access to key markets, issues related to ensuring nutritional needs, quality of biological material, implementation of farm biosecurity programs due to lack of investment, issues related to environment.*

***Keywords:** manufacturing industry, meat, broiler, challenges*

INTRODUCTION

There are a number of requirements at poultry farms that must be met in the management of broiler meat, so that it can achieve better performance in a way that is acceptable to those responsible for running the business and to the community in general. These requirements are the keys to a good management and can be used to test the management of a meat broiler farm against its management standard. These requirements are called principles, the importance of each principle changes according to the specific situation and therefore the emphasis on each of these principles may change from one farm to another. This means that, although the principles do not change the

degree of emphasis and the method of application may change, each facet of the farm must be tested against the relevant principle (s). For the proper functioning of farms in economic conditions must be observed the following principles (5, 7, 10, 12, 13, 19):

- ensuring a harmonious interaction between farm staff and meat broilers by:

• ***correct attitude:***

- paying attention to the needs of broilers;
- spending as much time as possible in the shelter;
- walking among birds at certain intervals of time;
- talking to birds;

• ***positive attitude and knowledge:***

- willingness to spend time in shelters, in order to be able to react to any adverse situation as it develops to keep stress to a minimum;
- the needs and behavior of the poultry in different circumstances (11);
- management techniques;

- the corresponding growth of broilers, which involves:

• ***ensuring well-being by:***

- elimination of everything that can cause injuries;
- elimination of all sources of unnecessary harassment;
- supply of good quality feed, with adequate feed front;
- providing good quality water at discretion;
- providing an adequate surface with sufficient space/broiler head;

• restriction of freedom of movement, which has advantages and disadvantages:

an advantage:

- increasing the number of birds that can be raised by the same workforce;
 - better organization of management associated with the type and age of sheltered birds(2,3);
 - better organization of the work schedule;
 - protection of birds;
 - reduction of production costs;
 - reducing labor costs in managing meat production (6, 8);
 - reducing the risk of diseases caused by pathogens (1, 4, 9);
- disadvantage:**
- increasing the risk of unwanted behavioral changes;
 - increasing the risk of infectious diseases;
 - increasing the risk of a significant decrease in performance;

- increasing the risk of negative assessments in case of housing at very high densities;
 - ***protection of broilers from the manifestations of a harsh environment*** (environment outside the comfort zone of the birds):
 - high levels of pollutants such as ammonia;
 - high/low temperature variations;
 - high humidity in certain circumstances;
 - air currents;
 - inadequate ventilation and/or air movement;
 - ***the nutrition of the broilers in order to obtain a good economic performance, which depends on:***
 - the quality of the ingredients from which the diet is made;
 - respecting the proportion of ingredients;
 - avoiding the use of too old feed;
 - avoid the use of moldy ingredients;
 - inclusion of all specified ingredients for ration balancing;
 - reformulating the diet if one of the ingredients is not available;
 - use of micro-ingredients, amino acids, vitamins, minerals within the shelf life and cold storage;
 - ***adequate marketing*** (1,14,16,17):
 - ***competitiveness***: the higher price is usually associated with a good quality and/or specialized product - therefore, it is necessary to correlate the price with the quality and demand in the market and to operate in a competitive way with the competition;
 - ***reliability*** of the quality, offer and price of poultry products;
 - ***the production of meat and meat products*** demanded by consumers, which means that continuous market research must be carried out to correlate production with demand;
 - maintaining the health of broilers by:
 - ***disease prevention***:
 - ***application of a strict farm biosecurity program***:
 - control of the movement of personnel and equipment around the farm;
 - control of vehicles and visitors;
 - providing shower facilities and clean clothing for staff and visitors;
 - introduction of day-old chicks only on the farm;
 - isolation of the farm/warehouses from the administrative area;
 - preventing the access to shelters of disease-transmitting wild birds;
 - ***use of good hygiene practices***:

- thorough cleaning and disinfection of shelters after each series;
- providing washing facilities for staff, key visitors and vehicles before entry;
- maintaining well-being through care, nutrition and shelter;
- use of foot sanitizers at the entrance to the halls;
- use of monitoring procedures to verify the disease status of the holding, to verify the effectiveness of cleaning and sanitation procedures and to test immunity levels to certain diseases to verify the effectiveness of veterinary management;
- use of a disease prevention program;
- **early recognition of the disease**, one of the first skills that should be learned by the farm manager, through frequent inspections of the herd to monitor the signs of disease every day;
- **early treatment of the disease**, which can mean the difference between a mild and a more severe outbreak:
 - diagnoses must be supported by a laboratory examination to confirm the field diagnosis as well as to ensure that other issues are not involved, even if there are times when appropriate treatment may be recommended following a field diagnosis, that is, a firm autopsy;
 - the instructions must be read and followed carefully;
 - the treatments must be administered under the guidance of the farm veterinarian;
 - the correct treatment should be done as soon as possible, but only when the correct diagnosis has been made at an early stage;
 - the treatment must be administered correctly and at the recommended concentration or dose when treating the entire herd;
 - **compliance with the quality and class of broilers** by:
 - **choosing the type of meat** that is produced;
 - **analyzing the management situation and the market** in order to select a genotype that suits the management situation and/or produces an appropriate commodity for that market (17,19);
 - **use of a type of broiler known** to be of good quality and of an appropriate genotype;
 - **maximum use of management techniques**, by:
 - **management of live weight according to age**;
 - **management of staff uniformity**;
 - **regulation of daylight hours**;

- use of the necessary database:
 - *for financial management;*
 - *for efficient physical management of the farm.*

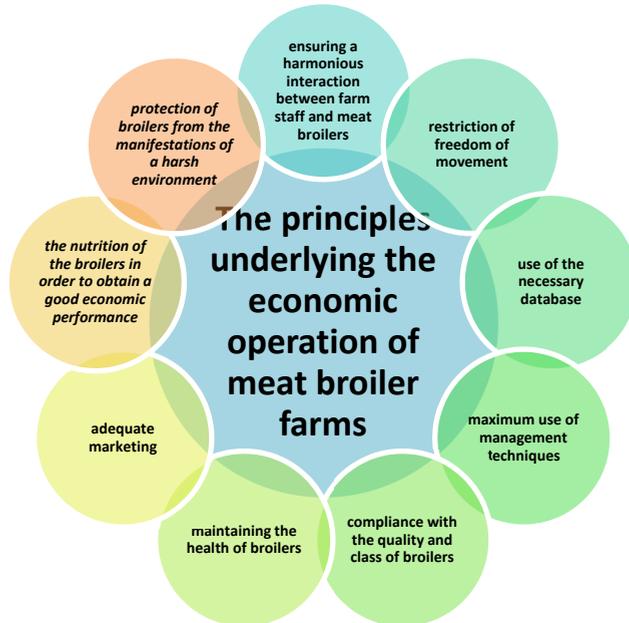


Figure 1. The principles underlying the economic operation of meat broiler farms

MATERIAL AND METHOD

For the efficiency of the operation and to ensure the market according to the preferences within this scientific approach, we have analyzed the challenges faced by the poultry production industry at zonal level, in order to intervene through rapid measures to adapt production according to consumer preferences for a certain brand, place of purchase, because the choice of commercial outlet depends on: the geographical situation of the distribution unit, product range, price level, consumer quality and brand advertising. Depending on the experience of buying a poultry broiler meat product, the market buyer will make a behavioral effort, opting for one of the options: routine purchase, limited, moderate or complete solution of the problem of choice or will want something else, forcing the meat producer to adapt production to the challenges and preferences of market to face competition.

RESULTS AND DISCUSSIONS

The adaptation of the broiler meat industry to the behavioral types of consumers on the market depends on the ability of:

- farms to meet consumer demands for a certain type of broiler meat products;
- products, brands, brands to cope with the cognitive capacity of consumers;
- situational factors;
- previous experience and involvement in solving the choice or preference for a particular product.

On the poultry broiler meat market in the area under analysis, Bihor County, the following situations are manifested regarding consumer preferences and how to choose a brand produced by a certain company, with major consequences on the entire decision-making management at production, processing, distribution and capitalization (1, 15, 18):

- little information on market preferences = little involvement of those from the broiler meat industry;
- rich information = low involvement due to the inability to adapt production systems efficiently to the challenges of the meat industry;
- rich information about meat market challenges = high involvement in adapting meat broiler operating systems;
- little information on market challenges = high involvement in adapting systems to produce products with a high degree of demand on the market.

The global challenges facing the poultry broiler industry are shown in Figure 2:

Figure 2. Global challenges facing the poultry broiler meat industry
Figure 2.

- **limited access to main markets**, a barrier to small poultry farmers because:

- a. earn little from sales;
- b. does not try to improve the quality of broilers;
- c. they have not modernized their farms although the production systems could be improved;
- d. do not have the capital for the use and implementation of the most advanced scientific practices;

- **issues related to the automatic provision of water** both in terms of waste, the quality of drinking water facilities and in terms of quantity and quality of water;

- **high costs of balancing feed rations**: this is one of the worst challenges for the industry and highlights why farms with modern feed technology implemented achieve the average daily expected increases at an early age, 30-32 days reach the average carcass weight of 1.80-2.40 kg;

- **genetic quality of poultry broilers for meat**: farmers have moved from raising meat hybrids in semi-intensive and intensive systems to operating commercial broilers in super-intensive systems because they ensure:

- an excellent conversion of compound feed;
- high growth rates;
- low mortality rates
- meat with high percentages of protein;
- high weight of high quality portions, chest, thighs;
- high recovery yields at cutting;
- sustainable profits due to the multiple possibilities of capitalization.

- **epidemics and the implementation of biosecurity programs**: the extent and types of disease outbreaks may vary, diseases of metabolic origin, skeletal;

- **the inclusion of antibiotics in broiler feed** and also the use of alternatives to antibiotic growth promoters;

- **inadequate investment in exploitation, processing, recovery**: the main determinants of the long-term broiler industry are:

- development of an efficient direct distribution system;
- investments in carcass obtaining and cutting technologies;
- large investments in the infrastructure of the cold chain of capitalization on the meat market;
- development of wholesale warehouses for storing refrigerated meat by broilers;
- increasing the degree of consumer acceptance of frozen chicken broiler;

- **environmental issues related to nutrition systems implemented on farms**:

a. excretion of nutrients through the use of non-compliant feed, difficult to assimilate;

b. large amount of nitrogen and phosphorus from manure from chicken broilers.

- **issues related to farm biosecurity**: in addition to the challenges posed by various pathogenic diseases, farmers also face the problem of low capital and therefore need subsidies for investments in farms to improve risk management;
- broiler safety and welfare issues concern:
 - prohibition of exploitation in non-compliant batteries;
 - ensuring the minimum of comfort;
 - safety of meat products for consumers.

CONCLUSIONS

In order to meet the challenges, the poultry broiler meat industry must be able to adapt to market conditions, constantly providing meat and meat specialties according to the preferences of consumers in economical farming conditions, without disturbing the health and welfare of birds. The challenges facing the meat industry must be carefully considered in order to intervene with the most effective measures to improve operating systems and adapt production quickly to market challenges, without reducing the economic efficiency of super-intensive chicken broiler farms. The adaptation of the chicken broiler industry to market challenges and consumer behavior depends on the ability of farms to meet the demands and preferences of buyers, through products and brands offered at the most competitive prices. The global challenges facing the chicken broiler industry in the analyzed area are limited access to the main markets, issues related to the high costs of providing water and a balanced protein-vitamin-mineral nutrition, the genetic quality of the broilers used in operation in some farms with low financial capital, problems of biosecurity, safety and welfare of broilers.

References

- Bold Marinela Lidia, Iancu Tiberiu, Petroman Cornelia, Adamov Tabita, Marin Diana, Văduva Loredana, Petroman I., (2019) – *Behavioral particularities of consumers of agricultural product*, *Lucrări Științifice, Seria I., Management Agricol*, 21(1);
- Chadwick Elle, Rahimi S., Grimes J., Pitts J., Beckstead R. (2020). *Sodium bisulphate feed additive aids broilers in growth and intestinal health during a coccidiosis challenge. Poultry Science*, 99, 5324-5330;
- Chirilă Cosmina Andrea, Petroman I., Petroman Cornelia, Varga Melania, Turc B., Marin Diana, (2015) – *Biological factors influencing meat production in poultry*, *Lucrări Științifice Management Agricol*, 17(2);
- Christensen, J. P., Bisgaard, M. (2000). *Fowl cholera. Revue Scientifique et Technique de l'Office International des Epizooties*, 19(2), 626-637.
- Crawfors I.M. (1997), *Agricultural and Food Marketing Management*, Rome: FAO;
- Damico A. B., Aulicino J. M., Di Pasquale Jorgelina. (2020). *Perceptions and Preconceptions about Chicken and Pork Meat: A Qualitative Exploratory Study of Argentine Consumers in the Metropolitan Area of Buenos Aires. Sustainability*, 12, 1-18;
- Georgescu G., Banu C., (2000) - *Tratat de producere, procesarea și valorificarea cărnii*, Editura Ceres București;
- Marin Diana, Bold Marinela Lidia, Danciu G., Petroman Cornelia, Văduva Loredana, Petroman I. (2019) – *The influence of age and weight at scarification on the characteristics of meat*, *Journal of Biotechnology*, 305, S37-S38;
- Marin Diana, Ciolac Ramona, Văduva Loredana, Petroman I., Petroman Cornelia (2019) – *Study regarding the tendencies of consumer behaviour at national and local level*, *Lucrări Științifice Management Agricol* 20(3);
- Mönch Julia, Rauch Elke, Hartmannsgruber Sandrina, Erhard M., Wolff Inga, Schmidt P., Schig Angela., Louton Helen. (2020). *The welfare impacts of mechanical and manual broiler catching and of circumstances at loading under field conditions*, 99, 5233-5251;
- Omotoyinbo C., Worlu R., Ogunnaike O. (2017). *Consumer Behaviour Modelling: A Myth or Heuristic Device? Perspectives of Innovations, Economics & Business*, 17(2), 101-119;
- Petroman I., (2007), *Managementul sistemelor de creștere și exploatare a animalelor*, Editura Eurostampa Timișoara;
- Petroman I., Culea C.,(1998) – *Sisteme de creștere și exploatare a animalelor*, Editura Mirton, Timișoara;
- Șerban Victoria, Petroman Cornelia, Petroman I., (2015) – *Poultry consumption in Romania*, *Lucrări Științifice Management Agricol* 17(2);
- Turc B., Petroman I., Fraiu Gianina (2014) – *Influence of slaughter yield on individual poultry production*, *Lucrări Științifice Management Agricol*, 16(2);
- Văcaru Opriș I., (2004) – *Tratat de avicultură*, vol.3. Editura Ceres, București;
- Zoican E.C., Marin S., Bold Marinela Livia, Petroman I., Văduva Loredana, Petroman Cornelia (2019) – *The role and place of agro-food products in human consumption*, *Lucrări Științifice, Seria I., Management Agricol*, 21(1);
- Zoican E.C., Marin S., Bold Marinela Lidia, Petroman I., Marin Diana, Văduva Loredana, Petroman Cornelia (2019) – *Proposal and implementation of measures to improve and support meat production*, *Journal of Biotechnology*, 305, S79;
- XXX - *The principles of poultry husbandry*, 2020.

NOTES ON THE AUTHORS

Marinela Lidia BOLD, PhD at the Banat's University of Agricultural Sciences and Veterinary of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timișoara, Faculty of Management and Rural Tourism, Calea Aradului, 119, Timisoara, Romania.

Loredana VĂDUVA – Assistant at the Banat's University of Agricultural Sciences and Veterinary of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timișoara, Faculty Management and Rural Tourism, Calea Aradului, 119, Timisoara, Romania, e-mail address: loredana_heber@yahoo.com.

Ioan PETROMAN, Professor at the Banat's University of Agricultural Sciences and Veterinary of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timișoara, Faculty of Management and Rural Tourism, Calea Aradului, 119, Timisoara, Romania, e-mail address: i_petroman@yahoo.com.