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A Review: Poultry Meat Production, Advantages and Disadvantages

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Abstract

Poultry meat is an indispensable source of animal protein in human growth and development, so it is in great demand by people all over the world. Poultry meat has many advantages, namely, the quality of the feed is good enough, the taste is delicious, the price is relatively affordable, it is easy to obtain and it is accepted by all levels of society with diverse backgrounds. The era of globalization requires competitive products, such as chicken meat in Indonesia, and the current chicken meat industry depends not only on

high production capacity and low production costs but also chicken products are safe to eat. As a result of trade liberalization, the poultry industry faces the risk of competition with cheaper products of better quality. Chicken meat food safety starts from the farm and manufacturing process to its consumption. Food safety is a requirement for food products that must be addressed through the involvement of government, industry and consumers.

Keywords: Poultry Meat Production, Food Safety, Advantages and Disadvantages

Introduction

Poultry products can be considered one of the most important sources of cheap protein, with white meat (poultry meat) very cheap compared to red meat (beef). The price of a kilo of animal meat is equivalent to the price of 3-4 kg poultry meat. Poultry production also has a higher conversion rate than feed to meat than other animals, with one kilogram of poultry meat requiring 2 to 2.5 kg of feed, while the production of one kilogram of red meat requires more than seven kilograms of feed (Anonymus, 2017) ^[1]. Poultry production has a high economic return due to the short production cycle, with a poultry production cycle of 7 to 8 weeks. In the case of poultry production, the capital cycle can be repeated 7 times a year (Anonymus, 2016) ^[2]. Poultry production needs a small area compared to other animals.

Poultry production can help solve the problem of unemployment. New jobs can be opened indirectly by developing industries associated with poultry production such as: feed industries, slaughter industries, food freezing and packaging industries, meat conservation industries, machinery production industries and technical tools for poultry production. Poultry production can contribute to the state's food security policy and strategy. Sustainable growth of poultry meat production volumes, including chicken meat, has been occurring worldwide for many years (Sakhatskiy, 2013; USDA, 2017) ^[3,4].

A significant increase in the production volumes of chicken meat in specific regions can lead to a geographical shift in the poultry farming industry. In particular, the leadership of the United States in the production and export of broiler meat is possible in the case of new industrial technologies for the implementation of chicken farming. This also applies to the countries of the European Union, which have already depleted the Earth's resource reserves for chickens grown for meat using the classic floor technique. The demand in China and India for livestock products is increasing at a rapid rate in conjunction with rapid economic growth. Continuous innovation leads to higher productivity while maintaining the same production cost. It is a desirable situation. One recent trend in fattening chicken production is to increase bird density, requiring environmental control of poultry homes through the use of fan and encryption systems for better live performance. Modern poultry production techniques, linked to improved education management and health control, have led to a higher conversion rate and improved production efficiency. The available literature (Aklilu, 2007) ^[5] indicates that improved environmental control of meaty chicken houses has played an important role in increasing the productivity of the poultry industry, particularly in tropical areas, or those suffering from hot summer conditions.

According to (Aklilu, 2007) ^[5], success in broiler production is directly related to economic viability, qualified labour, extensive use of good practices, and close connection with the consumer market. Each of these elements has a special significance; however, it must be viewed in an interdisciplinary manner, as these factors are intertwined. Medium-sized and small-scale broiler production has faced increasing difficulties to remain economically viable in the current vertical structured production model due to the necessary initial investment in housing, environmental control, etc. Due to market demand for

quality, processing plants are constantly implementing quality programs, as well as standards to obtain ISO 9000 certification. In addition, there is a trend to produce broiler chickens free of chemical, biological and physical contaminants due to food safety concerns. This results in sanitary and administrative restrictions, as well as limitations in the control of parasites and microorganisms inside poultry houses, and in the care of birds and personnel (Riise, *et al.*, 2004)^[6].

Poultry production systems show a clear distinction between the traditional low-input systems on the one hand and the modern production system using relatively advanced technology on the other hand. Chickens can be raised in different management and production systems. Depending on the type of chicken breed, level of input and output, mortality rate, type of product, purpose of production, brood length, growth rate and number of chickens kept. We will review some of these chicken production systems are free production system, semi-intensive production system and intensive production system.

A-Poultry Production System in the Free pastures this system of chicken production is practiced in most of the rural areas of the country, and the production targets are for domestic consumption and as an additional source of income for the family. They cover 95-98% of the country's chicken production system and are unprofitable because they are not market oriented. It has a small flock size (5-20 chickens per family) and is a domestic breed species that mostly depends on locally available feed material as a supplement with low sanitation and other management practices. The chicken does not have its own chicken house but is maintained in the main house with the family. The raising and rearing of chickens is only the care they get from their mothers/hens. Because of these there is a high rate of chicken mortality, long incubation periods and there is a risk of exposure to diseases of chickens and various predators. The main feed sources for chickens are worms obtained from litter, legumes and grains, and sometimes there is supplementary feed during feed shortages. The quantity given is small and does not meet their nutritional requirements. Because of this, their productivity is low (Riise, *et al.* 2004)^[6].

1. Advantages of Free-Range Chicken Production System The advantages of a free-range chicken production system include that chickens are healthy because they exercise freely outdoors, and there is minimal parasite infestation if there is enough space, little or no labor input, and chickens in this type of production system help on reducing the amount of litter in a productive manner and the direct costs of the system are low (Halima. 2007)^[7].

2. Disadvantages of the Free-Range Chicken Production System: The disadvantages of a free-range chicken production system include the difficulty of controlling and managing chickens, especially that young chicks are easily exposed to predators and unfavorable weather conditions, chickens eat planted seeds when foraging, and a large proportion of eggs can be lost because laying hens are not familiar with laying nests High disease transmission and high mortality, chickens are less productive (Halima. 2007)^[7].

B-Semi-Intensive Chicken Production System: This type of chicken production system is better than the free-range production system because it uses inputs like supplemental feed, vaccine, etc. It has a small house that accommodates a nest and feeders that serve as a home for hens at night. The house has a door that opens on one or both sides for easy transportation of chickens to the fenced area during the day. The fence can be made of wire mesh or other materials and will not allow chickens to escape over it. The fenced area should always be clean and dry. Since the feed that chickens get from litter is very low, it must be supplemented with energy and protein feeds. Since the main objective of production is to get profit, they should get better health management practices such as vaccination against non-communicable diseases from free scavenging system. They are more productive than chickens in a free scavenging regime. It contains a flock of 50-200 birds / chicken per family and it is an improved breed (Sakhatskiy, 2013)^[3].

1. Advantages of Semi-Intensive Chicken Production system: The advantage of this system includes complete operation control, useful for recording purposes, year-round operation, economical use of land (free range), and there is better protection during winter.

2. Disadvantages of Semi-Intensive Chicken Production System: The disadvantages of this chicken production system include the high cost of the fencing, the risk of overstocking and exposure to various diseases if the site is not clean and dry.

Intensive Chicken Production System: This type of chicken production system uses more inputs (feed, nutrition, breed, health, housing and other inputs) than the two chicken production systems mentioned above. It is market oriented and the main objective of production is to get better profit. The number of infected chickens is relatively high (more than 200 chickens). The chicken breed used is an improved specialized breed (layer or broiler). They must deliver the expected product within that time.

There are a few large-scale private commercial poultry farms and large commercial poultry provides fertilized eggs, table eggs, day-old chicks, broiler meat and adult breeding stock for modern, small-scale poultry farms. It is maintained as a full time business and is highly dependent on inputs into the market. General evidence indicates that the extensive poultry industry plays a major role in supplying poultry meat and eggs to urban markets at competitive prices. The industry also provides employment opportunities for a range of workers from poultry workers to truck drivers to professional managers (Solomon, 2007)^[8].

There are official marketing operations in urban and semi-urban areas that engage in large-scale commercial poultry production. The majority of products sold in the formal sector come from the commercial industry but a small number of original frozen chickens are provided through supermarkets. The largest commercial poultry units have agreements with their customers and most poultry meat is sold frozen. The majority of products sold in the formal sector come from the commercial industry but a small number of original frozen chickens are provided through supermarkets. Poultry bodies and table eggs are sold to residents and hotels either in supermarkets or convenience

stores/kiosks. Most of the supply of ready-made poultry carcasses to a supermarket came from a poultry farm, but many anonymous sources also supply stores (Bogale, 2008) [9].

Social and Cultural Restrictions: Sociocultural constraints to poultry development is the value placed on poultry for use in celebrations and festivals or even as a source of income in times of need but not as a source of daily food nor as a regular source of income. Some consider chickens to be pets or part of the family, and as such are rarely used as food for home consumption, although they can be sold without regret and use of money. Another obstacle is the social norm that determines the sheep owner's livestock. Usually, when the cultivation of crops is the main activity of men, livestock farming is seen as a neglected marginal activity for women and children. Practical experience indicates that there has been no regular watering and supplemental feeding and they do not clean the night shelter of the birds and take care of the young. Farmers are also reluctant to expand their poultry farms. The attitude of farmers to the sector keeps traditional rural poultry farming unchanged for a long time.

Breed Restrictions: Poultry breed is the main factor considered in the production of chicken or broiler meat. The meat-producing capacity of native chickens was limited in the growth performance. Day-old chickens from different groups of native chickens measure a live weight of 27.3 g per chicken in the adult live body weight of different groups of indigenous domestic chickens also reported 1.6 kg for males and 1.3 kg for females. According to the sources, there is no difference between white Leghorn chickens and native chickens raised under scavenging conditions in the average daily body weight gain at the age of two months. He also mentioned that the original chickens are sold for meat purposes starting from the age of 6-8 months with a weight of approximately 0.7 and 1.4 kg (Nigussie, 2001) [10].

Conclusion

Poultry includes all domestic birds raised for the purpose of producing human food (meat and eggs) such as chickens, turkeys, ducks, geese, ostriches, guinea birds and pigeons. Ostriches, ducks, guinea chickens and pigeons are found in the natural environment, while geese and turkeys are uncommon. Poultry production is therefore synonymous with chicken production under current natural conditions. Poultry production systems show a clear distinction between the traditional low-input systems on the one hand and the modern production system using relatively advanced technology on the other. Poultry production is very important by providing human food needs, Poverty alleviation, which requires small space and capital for investment; sources of family income and utilization for females and children and many social, economic and cultural benefits, are influenced by various factors, the low cost of feed; diseases, biosecurity and environmental constraints. Due to different constraints, the meat production capacity of local or local chickens is low, so it is difficult to provide the meat that humans need using local strains because local breeds have a dual purpose with low production capacity and must be genetically promoted by selecting superior birds and hybridizing with local breeds to counteract the low production capacity of indigenous peoples.

References

1. Anonymus, 2017. <https://www.statista.com/statistics/237637/production-of-poultry-meat-worldwide-since-1990/>
2. Anonymus. Latest Poultry, Egg Markets, Forecast available in 2016. WATT executive guide to World Poultry Trends, 2016. www.poultrytrends.com/2016.
3. Sakhatskiy MI. Broiler meat production in the world, 2013. <http://texha.com/en/press-center/articles/broiler-meat-production-in-the-world.html>
4. USDA. Livestock and Poultry: World Markets and Trade. Foreign Agricultural Service, 2017.
5. Aklilu HM. Village poultry in Ethiopia; socio-technical analysis and learning with farmers. PhD Thesis, Wageningen University, Wageningen, the Netherlands Yami, A., 1995. Poultry production in Ethiopia. World's Poult. Sci. J. 2007; 51:197-201.
6. Riise JC, Permin A, Mc Ainsh CV, Frederiksen L. Keeping village poultry. A technical manual on small-scale poultry production. Network for small holder poultry development, 2004.
7. Halima HM. Phenotypic and genetic characterization of indigenous chicken populations in Northwest Ethiopia, highlands of Ethiopia. M.Sc Thesis, Swedish University of Agricultural Sciences, Sweden, 2007.
8. Solomon D. Suitability of hay-box brooding technology to rural household poultry production system. Jimma University College of Agriculture and Veterinary Medicine, Jimma, Ethiopia, 2007.
9. Bogale K. In situ characterization of local chicken ecotype for functional traits and production system in Fogera district, Amahara regional state. M.Sc. Thesis submitted to the department of animal science school of graduate studies, Haramaya University, 2008, p107.
10. Nigussie D. Breeding programs for indigenous chicken in Ethiopia, Analysis of diversity in production systems and chicken populations. PhD. Thesis submitted in fulfillment of the requirements for the degree of doctor at Wageningen University Netherlands, 2011, p148.