

THE MAIN FACTORS AFFECTING POULTRY PRODUCTION IN LIBYA

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Abstract. The aim of the paper is to analyze and present some selected issues of poultry production in Libya. There were presented technological as well as economic factors that cause poultry production is very important. Poultry production in Libya is conditioned by feeding process, selection of chicks and veterinary health care. Feeding process is a very important factor upon which production efficiency depends. It influences not only the quantity of poultry production but also the quality of it. Poultry breeding process depends on the quality of veterinary health care for chicks (breeding material) and feed processing.

Key words: poultry production, Libya

INTRODUCTION

Poultry industry by its scientific, technical and economic sense took place in Libya since the seventies of the 20th century, where the breeding process of chickens for meat production as well as for egg production started in an intensive way. Before the seventies the poultry production was prevailing in the rural areas at small scale and traditional methods. At that time the surplus of meat and eggs gathered and transported from the rural areas to the urban areas to meet partly the demand of the urban population.

The rapid increase of the population and increase of the per-capita income in Libya have led to the increase of consumption demand on food in general and on meat in particular what has widened the gap between poultry products supply and demand. To narrow this gap Libya started the development of poultry production at a large and intensive scale within the state sector and encouraged private sector to do the same

THE IMPORTANCE OF POULTRY PRODUCTION

The importance of poultry production can be summarized as follows:

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- Poultry products can be considered as one of the most important sources of cheap protein in Lybia, where the white meat (poultry meat) is very cheap as compared with the red meat (animal meat). The price of one kg of animal meat is equivalent to the price of 3–4 kg of poultry meat [Khalid 1983].
- Poultry production is characterized by its high economic return due to its short production cycle, where the production cycle of poultry production takes 7–8 weeks meanwhile the production cycle of bovine takes from 3 to 12 months. Therefore the capital cycle is very rapid in the case of poultry production as compared with the capital cycle in other types of animal production. In the case of poultry production the capital cycle can be repeated 7 times a year [British poultry science 2006]:
- The poultry production is characterized also by a higher conversion rate of feed to meat in comparison with other animals, where the production of one kg of poultry meat needs from 2 to 2.5 kg of feed meanwhile the production of one kg of red meat needs more than seven kg of feed [Bagi 1995].
- Poultry production needs small area in comparison with other animals. The table nr 1 illustrates the ground area needed for poultry breeding of different purposes of poultry production.
- Poultry production can contribute to the solution of the unemployment problem. Poultry breeding can directly open new employment opportunities. Moreover it can open new jobs indirectly through the development of the industries connected with poultry production such as: feed industries, storage and marketing of egg production, slaughtering industries, food freezing and packing industries, meat conservation industries, industries producing machines and technical tools necessary for poultry production, etc.
- Poultry production can contribute to the state food security policy and strategy.

Table 1. The area needed for poultry production

Tabela 1. Powierzchnia niezbędna do produkcji drobiu

Poultry types	The ground The number of birds per square meter	Ground area square feet per bird	Length of bird bed cm
Poultry for egg production	3	3.6	25 cm
Poultry for meat production	4	27	20 cm
Poultry of dual function, egg and meat	4–5	2.1–2.7	

Source: FAO, Animal production and animal health.

Źródło: FAO, Animal production and animal health.

FACTORS AFFECTING POULTRY PRODUCTION IN LIBYA

Factors affecting poultry production are numerous, however the following factors seems to be the most important one:

1. Feeding Process

Feed cost represents 70 percent of the total cost of broiler production [British Poultry Science 2006], in broilers production feed efficiency may be improved correlated respon-

se to selection for decreased age of market weight. Increasing body weight at a given age increased both maintenance cost and fat yield at a given age, but this did not hold to a given body weight [Pym 1990]. Feeding process then is a very important factor upon which economics of production depends. Feed has its impact not only upon the quantity of poultry production but also upon the quality of the bird. The proper feeding process is that which use a less quantity of feed at a cheap price to give the highest production quantity at a best quality, in other words the economic feeding process is that which gives the highest profitability.

As poultry strain bears its special efficiency and characteristics, the right feed is an important factor to keep and support such a efficiency. In other words to keep the advantages and support the efficiency and characteristics of a given poultry strain, we have to feed this strain in a proper way.

The feed needs of the different poultry strains are in equal, where the feed needs of the poultry strains for egg production differs from that for meat production. Moreover the feed needs of a given strain differ according to the weather, climate conditions and other factors. There is no universally applicable solution for optimal feeding of livestock; climate conditions, availability of feedstuff, local prices, local technical infrastructure determine the optimal working pattern of poultry breeders, the latter should be specialized in balancing these parameters and finding the optimal solution.

In Libya poultry feeding industry depends upon the local raw-materials such as barley, wheat, fish powder, lime-stone, salt, and dicalcium phosphate as well as upon the imported feed components, such as yellow maize, soybean meal, cotton seeds meal and crude protein.

According to the available statistical data there are more than twenty feed-stuff factories. The table nr 2 illustrates the main feed stuff factories, and its production capacities per hour as well as its production quantity in Libya.

It is clear from table (2) that the production capacities of the staff factories in Libya are not fully utilized, only two feed stuff factories are working (3) shifts, and five factories are working (2) shifts per day, meanwhile (11) factories are working for only one shift. This does not mean that Libya has achieved self-sufficiency in feed production and consumption. Libya still imports ready-made feed stuff from abroad, and Table (3) illustrates this fact.

2. Chikens

Chikens can be considered as the back bone of the poultry breeding process. The success or the failure of poultry production process depends among other factors, upon the choice of the kind of chick's subject of breeding process. When the breeder chooses his chicks he must take in his consideration the local conditions of his environment such as climate, temperature, humidity, etc. Chicks are divided into strains. Every strain includes these birds which have the same characteristics and shape. The stain may be pure or mixed with other strains. Both meat and egg production depends mainly upon the genetic composition of the strain. Any poultry strain can keep its special characteristics and advantages only under a given environment. Therefore the success of poultry breeding process depends mainly upon the right choice of poultry strains. The right choice of po-

Table 2. Feed stuff factories in Libya in 1995
Tabela 2. Fabryki produkujące paszę w Libii w 1995 roku

No.	Name of factory	Production capacity Ton/hour	Working hours per day	Number of working shifts	Number of hour per shift	Production Ton/hour
1	AL QUARRA BOLLY FACTORY	50	21	3	7	231.0
2	TRIPOLI FACTORY	30	16	2	8	132.0
3	SEVEN APRIL FACTORY	10	16	2	8	44.0
4	SURMAN FACTORY	10	16	2	8	44.0
5	ZLETEN FACTORY	10	16	2	8	44.0
6	SIRTE FACTORY	40	8	1	8	88.0
7	SABHA FACTORY	10	16	2	8	44.0
8	BENGHAZI FACTORY	40	8	1	8	88.0
9	ALABYAR FACTORY	40	21	3	7	231.0
10	ALBAYDHA'E FACTORY	40	8	1	8	88.0
11	TOPRUQ FACTORY	40	8	1	8	88.0
12	ANNASRE FACTORY	5	8	1	8	11.0
13	ALHEERAH FACTORY	12	8	1	8	26.4
14	ALHURREYYAH FACTORY	12	8	1	8	26.4
15	TAWERGA'H'E FACTORY	20	8	1	8	44.0
16	GHUT ASSOLTAN FACTORY	20	8	1	8	44.0
17	THE LIBYAN- ROMANIAN FACTORY	5	8	6	8	1.0
TOTAL		349	202	26	134	1284.8

Source: Fawzy Abdel Baqy, 1995: Feed stuff production in Libya and its relation with food security, scientific assembly about food security and possibilities of its realization, Misratah. 28–29/12/1995.

Źródło: Fawzy Abdel Baqy, 1995: Feed stuff production in Libya and its relation with food security, scientific assembly about food security and possibilities of its realization, Misratah. 28–29/12/1995.

Table 3. Quantity and values of feed stuff imports during the year (2006)
Tabela 3. Wielkość i wartość importu pasz w 2006 roku

Commodity description	Quantity kg	Value LYD
Maize unmilled	313 752 951	72 131 310
Fodder roots, hay, vetches, and similar forage products (alfalfa)	8 335 456	1 928 324
Oil cake and other vegetable oil residues	28 559 195	109 000 062
Flours and powder of fish... etc, unfit for animal feed	60 072	15 018
Food wastes and other preparations for animal feed	10 656 137	3 305 132
Cotton seeds	902 896	340 222

Source: G.S.P. Libyan Arab Jamahiriya, General Authority for Information, External Trade 2006, statistics, pp 35–40.

Źródło: G.S.P. Libyan Arab Jamahiriya, General Authority for Information, External Trade 2006, statistics, str. 35–40.

ultry strain requires a high scientific and technical experience in addition to the material possibilities of the breeder. Here the random sample test and other test methods should be used for the choice of the right poultry strain.

In his selection for poultry strain for egg production the breeder should take in his consideration the following economic differences between the brown egg lines and the white egg lines (see table 4).

Table 4. Economic differences between brown egg lines and white egg lines
Tabela 4. Różnice ekonomiczne pomiędzy liniami o brązowych i białych jajach

Comparison Elements	Brown Strain	White Strain
Colour	Male is white, female is brown	Male and female are white
Death ratio	Low	Relatively high
Fierceness degree	Little	Relatively bigger
Egg eaten custom degree	Little	Relatively bigger
Disease catching degree	Little	Relatively bigger
Feed consumption:		
a- For the whole breeding time	9.8 kg of feed stuff	7.5 kg
b- For the whole period of production	45–46 kg	43–44 kg
The beginning of the period of production	At the end of the twenty second week	At the beginning of the twenty first week
Total egg production per hen	290 egg	310 egg
Egg weight	63 gm	60 gm
Number of birds per m ² of ground	6–5 bird	6 birds
Number of birds per battery cage	4 birds	5 birds

Source: Osama Abdoallah 2004: Short view about economics of poultry for egg production in Middle-East and North Africa poultry bulletin, vol 178, Sep/Oct. 2004, p 46, in Arabic.

Źródło: Osama Abdoallah, 2004: Short view about economics of poultry for egg production in Middle-East and North Africa poultry bulletin, vol 178, Sep/Oct. 2004, p 46, po arabsku.

Due to the vital importance of feed stuffs as one of the main elements of poultry production costs where it constitutes about 70 percent of the total variable costs of poultry production, the decision maker in the poultry farm should take in his consideration the feed conversion ratio during his choice for the type of poultry strains. This is very important for poultry production process to make it more effective from the economic point of view.

In Libya poultry production depends upon three sources for poultry strains and hatching eggs, the first is the poultry farms belonging to the public sector which own breeder hens such as Tripoli poultry complex which has three great chick hatcheries of 20 million egg capacity for the production of 15 million chicks for meat production. This is beside Benghazi poultry complex which has a hatchery or 15 million egg capacities per year to produce 7.5 million chicks yearly [The secretariat...2003]. The second source for poultry strains and hatching eggs is the great poultry farms belonging to the private sector.

The third source for chicks and hatching eggs is import from abroad, where Libya imports some selected chicks for meat production and chick for egg production as well as hatching eggs from Belgium, France and from Netherlands. Table (5) illustrate the quantities of hatching eggs imported by Libya during the period 1995–2006.

Table 5. The quantities of hatching eggs imported by Libya during the period 1995–2006
 Tabela 5. Liczba jajek wylęgowych importowanych do Libii w latach 1995–2006

Quantity in M. Ton	1995	1999	2000	2001	2006
Quantity of Imported egg M. Ton	768.2	3800	3100	2700	1128
Dozen					140364

Source: For the year 1995: see; the National Authority for Information-Foreign Trade Statistics 1990–1995; for the years 1999–2001: see: F.A.O. The Statistical year book 2001. vol 55. For the year 2006: see: the General Authority for Information External Trade 2006 Statistics.

Źródło: Za rok 1995 – the National Authority for Information-Foreign Trade Statistics 1990–1995; za lata 1999–2001 – F.A.O. The Statistical year book 2001. vol 55; za rok 2006 - the General Authority for Information External Trade 2006 Statistics.

3. The veterinary health care

The veterinary health care for chicks is one of the most important factors affecting poultry production. The periodical veterinary control is necessary to discover any kind of poultry diseases at its early. This is necessary to save poultry production through the veterinary treatment of chicks against these diseases. To protect and to increase the immunity of the poultry live-stock against death or against the decrease of chick body weight, all necessary disease vaccination should be fulfilled at the right time. To vaccinate chicks at the right time, all types of vaccines should be available at the right time and in the right place, also veterinary stations should be available and sufficient in the different regions in which the poultry farms do exist. Moreover, all types and methods of sanitation such as poultry house sanitation, flour sanitation, Hatcher, and cages sanitation.. etc, should be fulfilled cleaning hatcheries between hatches, and the hatcheries waste disposal is very important.

As regards Libya in this respect, three years ago Libya has faced some difficulties in the field of veterinary services where there was an acute shortage in the supply of vaccines and sanitation materials. This was due to the economic blockade imposed on Libya by the western countries. It was very difficult to import vaccines and chemicals for sanitation, therefore vaccines and chemical sanitation materials reached Libya so late, and the validity of these vaccines were very near their expiring date what has decreased the effectiveness of these vaccines. This situation had left its negative impact upon the level of poultry production in Libya.

CONCLUSIONS

In Libya, the system of poultry production has changed from small traditional forms of production to more intensive and large scale poultry farms in order to meet increasing demand. Poultry production is important because of both technical and economic reasons. The most important factors influencing this production were: feeding process, selection of chicks and veterinary health care.

As far as Libya is concerned, poultry feeding industry depends upon the local raw-materials as well as upon the imported feed components. There are more than twenty feed-stuff factories.

Moreover, poultry production depends upon three sources for poultry strains and hatching eggs. The first is the poultry farms belonging to the public sector which own breeder hens, the second private farms and next imported material.

There were some problems in Libya with the last distinguished factor – veterinary health care as a result of lack of appropriate medicaments which could not be imported. However, the situation is improving after the raise of economic blockade.

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DETERMINANTY PRODUKCJI DROBIU W LIBII

Streszczenie. Celem opracowania jest przedstawienie i ocena wybranych aspektów produkcji drobiu w Libii. Duże znaczenie tej produkcji jest uwarunkowane zarówno czynnikami technologicznymi jak i ekonomicznymi. Wśród czynników determinujących produkcję drobiu w Libii wskazano na trzy najważniejsze, jakimi są: zastosowanie odpowiednich pasz, dobór kurczaków oraz opieka weterynaryjna. Właściwie żywienie drobiu decyduje w dużej mierze o opłacalności produkcji. Ponadto wpływa nie tylko na uzyskiwaną wielkość, ale też jakość produkcji. Kolejnym, podstawowym uwarunkowaniem opłacalności produkcji jest dobór odpowiednich gatunków kurcząt oraz odpowiednie ich żywienie. W chowie kurcząt bardzo ważną rolę odgrywa właściwa opieka weterynaryjna.

Słowa kluczowe: produkcja drobiu, Libia

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