RESEARCHES CONCERNING THE CAUSES OF OUTPUTS IN THE EFFECTS OF HERBAL BLOOD CHICKEN

Elena Hriscu (Ursu)[1*], Irina Elena Ismană (Ciobotaru)[1], M.G. Usturoi[2]

[1]Sanitary Veterinary and Food Safety Laboratory Iasi, Romania
[2]Faculty of Animal Sciences, University of Agricultural Sciences and Veterinary Medicine of Iasi, Romania

Abstract

The study was conducted in two chicken broiler breeding units divided into two seasons (one summer and one winter) and the losses from the flock and their causes were observed from day one to the day 40th (before slaughter).

The outbreak situation in chickens in Unit A was very good, with levels of 2.38% in the hot season and 2.14% in the cold.

In the hot season, the causes of mortality due to handling and transport were 40.33% (173 caps); from the causes of post-vaccine reactions the mortality was 12.95% (53 caps) and due to bacterial infections was a with 30.16% meaning a 168 head, these infections being caused by bacteria of the genus Escherichia coli and Staphylococuss spp.

For the last period of growth (28-40 days), the losses in the herd were due to the high density of the chickens due to weight gain, but they were smaller and sporadic, accounting for only 8.16% (35 caps).

In the cold season, mechanical outbreaks / incubation defects were 249 head. (57.91%), post-vaccination reactions 72 head (16.74%) and bacterial causes caused by bacteria of the genus Escherichia coli and Staphylococuss spp. were 109 head (25.35%).

The outbreak situation in B units was 2.4% in the warm season and 2.0% in the cold season.

In the warm season due to mechanical accidents and incubation defects, the mortality was 57.21% (278 caps); the causes of bacterial outflows were 21.19% (103 caps), infections caused by bacteria of the genus Escherichia coli and Staphylococuss spp.

Other causes that determined mortality were post vaccination reactions, totaling 72 head (14.81%) and due to increased density towards the end of the growth period, mortality of 33 head was recorded. (6.79%).

The results of the losses in the cold season obtained by mechanical and incubation defects were 280 head. (68.13%), the outcomes due to bacterial infections were 23.84% (98 caps), which were determined by bacteria of the genus Escherichia coli and Staphylococuss spp., Due to increased density during the last period of growth, the losses were of 8.03% (33 caps).

Outflows from the two units under study were below the 5% maximum as specified in the ROSS 308 Hybrid Growth Guide, demonstrating that growth technology was appropriate.

Key words: cause of exits, biosecurity, broiler chickens, growing farm

INTRODUCTION

Bird's health is the most important in meat production and must start from good quality and healthy day chicks. Farm control programs involve: disease prevention; early detection of disease state; appropriate disease treatment detected.

Biosafety and vaccination are integral parts of successful health management; the necessary biosecurity to prevent the introduction of diseases into the farm, and the appropriate vaccination program is useful for treating endemic diseases [6].

The microclimate of poultry houses should be correlated with their requirements in terms of temperature, relative humidity, lighting, noise and ventilation; Otherwise, there may be various diseases that have often resulted in the death of birds.

Prior to popularization, halls are properly prepared to avoid contamination with various

*Corresponding author: dr_ursu_elena@yahoo.com
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infectious agents that can cause illnesses and implicitly considerable mortality.

In the broiler chickens, the "empty, everything full" principle must be respected and the interval between depopulation and restocking should be at least 10 days.

Disease prevention in poultry farms is based on a hierarchy of prophylactic measures such as hygiene and decontamination, vaccination, maintenance, nutrition and medication [4,5].

Most embryonic diseases are due to vertical transmission, and the following diseases can be transmitted: salmonellosis, respiratory mycoplasmosis, avian pseudomonasis, colibacilosis, Newcastle disease, aspergillosis, etc. [2].

Escherichia coli (APEC) can cause infectious disease in chickens, turkeys and other avian species due to respiratory tract infection, by typical signs of colibacillosis such as colisectomy and coligranulomatosis, omphalitis, sinusitis, aerosaculitis, arthritis / synovitis, peritonitis, pericarditis, perihepatitis, cellulitis and swollen head syndrome. The disease caused by these APEC strains results in significant financial losses to poultry farming worldwide (Kunert Filho H.C. et al., 2015) [3].

Other researchers have studied Salmonella in birds as one of the most common zoonotic diseases associated with major public health and economic losses globally. The main sources of infection are eggs and poultry. As a consequence, control measures on the quality of fodder administered, on farm biosecurity measures in the slaughtering process, thus producing the safest food for public health (Awad W.A and Ghareeb K., 2014) [1].

From this point of view, I have tried to identify the causes of the outbreaks of broilers from the two studied units.

Samples were tested from a bacteriological point of view using standardized and accredited RENAR working methods.

MATERIAL AND METHOD

The study was conducted in two units (Unit A and Unit B) in two different seasons (one hot and one cold).

The causes of the mortality of chickens with which the halls of the two units studied were due to mechanical / defective hazards, vaccinations, increased density and bacterial infections.

To identify the causes of baby mortality due to bacterial infections, micro-organisms have been identified by specific methods of work to determine each type of bacteria.

To isolate and identify the microorganisms that can contaminate the samples, we performed the following steps:

1. Primary isolation stage - consists in stimulating the growth of bacterial strains on non-selective usual agar and nutrient broth.

After sowing the two media were thermostated at 37°C for 24 hours.

2. Identification stage - consists of the bird from the two media of the previous stage, on selective isolation media, depending on the characteristics of bacterial culture development.

3. Biochemical identification and confirmation by miniAPI tests.

To isolate and identify bacteria of the genus Salmonella spp., Were sown from the liquid broth medium, on selective AgarXLD (xylose-lysine-deoxycholate) agar medium. The cultures were thermostated at 37°C for 24 hours. After this period the plates were read, and no microbial development specific to the development of Salmonella spp.

For the isolation and identification of bacteria of the genus Escherichia coli, it was sown from the usual broth and nutrient agar mediums, on special diagnostic environments for the Enterobacteriaceae group, finding that the nutrient broth showed intense turbidity, a ring on the surface and the nutrient agar were developed colonies of variable sizes (2-6 mm diameter), opaque, unpigmented, type S. Cultures emit smell of ammonia.

The special environments for this type of bacteria are XLD (xylose-lysine-deoxycholate agar), which have developed yellow colonies.

For the biochemical confirmation the characteristics of these bacteria are: ferment lactase and glucose, produces lysine decarboxylase, is indole positive, does not produce hydrogen sulphide and does not use ammonium citrate as the sole source of carbon. For the safest confirmation we used the miniAPI ID 32 E.

To isolate and identify bacteria of the genus Staphylococcus spp was sown from the usual broth and nutrient agar medium. On the nutrient broth, staphylococci grow abundantly, with uniform turbidity and homogeneous storage, while the medium becomes clear. Frequently, on the surface forms an annular film. On the surface of the solid agar-nutrient agar, staphylococci form within 24 hours, under aerobic conditions, colonies with a diameter of up to 3 mm, and within 4-5 days their size is 3 to 10 mm.

Due to these colony development features, the Baird-Parker special isolation media with the RPF was used.

On this selective isolation medium or developed black-gray colonies, surrounded by an opaque halo.

BioAPI ID 32 STAPH galleries are used for biochemical confirmation.

To isolate and identify bacteria of the genus Streptococcus spp., The nutrient broth passes through the selective Edward agar isolating medium.

The appearance of the colonies on this medium is small, fine, gray, metallic, but we have not found microbial growth.

RESULTS AND DISCUSSIONS

Following these analyzes, it was found that in both units, the causes of bacterial infections of the offspring were Escherichia coli and Staphylococcus (Figures 1 and 2).

Fig. 1 Typical colonies of *E. coli* on XLD agar

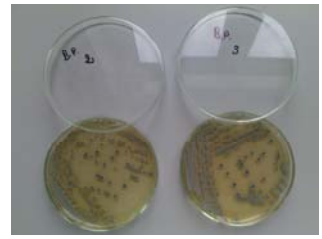

Fig. 2 Baird Parker medium - typical colonies of *Staphylococcus spp*

Unit"A"

The total wastage recorded in the warm season was 2.38% of the total number of chicks in the population (18,550 caps), and in the cold season of the total population to 19,000 cap. the mortality rate at the end of the growth was 2.14%.

The warm season

The total number of pups in the population was 18,550 head, and the losses were 429 head. (Table 1).

Table 1 Causes of outflows in chickens in unit "A"

Causes outputs	Warm Season		Cold Season	
	heads	percent%	heads	percent%
Mechanical / defective hunting accidents	173	40.33	249	57.91
Bacterial	168	39.16	109	25.35
Post vaccination reactions	53	12.95	72	16.74
Increased density	35	8.16	0	0
Total	**429**	**100.0**	**430**	**100.0**

Most losses in the herd were recorded in the first 14 days of life due to hatching defects, handling, transport and population accidents, high temperatures during this period, and also bacterial causes.

Thus, the losses caused by handling and transport were 173 head, meaning 40.33%.

Effective losses from post-vaccine reactions were 53 head, representing 12.35%.

The causes of mortality of the chickens with which the hall was populated were also due to bacterial infections and were represented by 168 head, which means 30.16%; these infections were caused by

bacteria of the genus Escherichia coli and Staphylococuss spp.

For the last period of growth (28-40 days), the losses in the herd were due to the high density of the chickens due to weight gain, but they were smaller and sporadic, accounting for only 8.16% (35 caps).

The cold season

From a total of 19,000 chick puppies, the losses were 430 caps.

Exits due to mechanical accidents and hatching defects were 249 head. representing 57.91%, post vaccination reactions 72 head. with a percentage of 16.74% and those from bacterial causes caused by bacteria of the genus Escherichia coli and Staphylococuss spp. were 109 head. (25.35%).

Unit "B"

The distribution of the losses from the total of the analyzed ones was analyzed, according to the causes that determined these outputs (Table 2).

Table 2 Causes of outflows in chickens in unit "B"

Causes outputs	Warm Season		Cold Season	
	heads	percent%	heads	percent%
Mechanical / defective hunting accidents	278	57.21	280	68.13
Bacterial	103	21.19	98	23.84
Post vaccination reactions	72	14.81	0	0
Increased density	33	6.79	33	8.03
Total	**486**	**100.0**	**411**	**100.0**

The warm season

Of the total number of chicks at the popular 18,500 head, the losses were 486 head. resulting in a number of 18,014 caps. at the end of the growing period (40th day).

Due to mechanical accidents and incubation defects, the mortality rate was 57.21% (278 caps)

Causes of bacterial outflows were 21.19% (103 head), infections caused by bacteria of the genus Escherichia coli and Staphylococuss spp.

Other causes that determined mortality were post vaccination reactions, totaling 72 head (14.81%).

Due to the increased density towards the end of the growth period, there were mortalities of 33 head. representing 6.79%.

The cold season

Of the total chicks at the popular 18,700 head, the losses were 411 head. reaching the end of the growing period (40th day) to a 18,289 cap.

Causes of outflows were multiple: mechanical accidents, incubation defects, bacterial infections, and increased density due to weight gain, resulting in various lesions discovered by morphopathological examination.

The losses from the stock due to mechanical accidents and incubation defects were 280 head. representing 68.13%.

Exits due to bacterial infections were 23.84% (98 head), which were determined by bacteria of the genus Escherichia coli and Staphylococuss spp.

Due to the increased density during the last period of growth, the percentage of losses was 8.03% (33 caps), for this reason the staff reductions started with the 38th day of growth.

CONCLUSIONS

The percentage of chickens' outflows in unit A was 2.38% in the warm season and 2.14% in the cold season; the mortality rate for chickens in unit B was 2.4% in the warm season and 2% in the cold season.

In the industrial growth of the chickens of the two units, the losses from the registered stock did not have a big percentage, otherwise it would not be profitable this growth system, by all means reducing these losses.

Outflows from the two units under study were below the 5% maximum as specified in the ROSS 308 Hybrid Growth Guide, demonstrating that growth technology was appropriate.

The importance of these researches was to know which are or can be the causes of the losses in broiler chickens observed in the two units studied.

Biosecurity measures in poultry establishments imply compliance with epidemiological principles and require an overall approach involving planning, location of resources, implementation and control.

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