Article **ECORFAN Journal**
December 2017 Vol.3 No.5 12-15

A Case of Inactivated Commercial Vaccine Functionality against Infectious Coryza Serotypes A, B and C *(Avibacterium Paragallinarum)* in Birds of Combat

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Received July 21, 2017; Accepted December 20, 2017

Abstract

Infectious coryza remains a serious problem for the poultry industry in many countries, despite the widespread use of commercial vaccines. In order to reduce costs, caused by this disease, it was applied the vaccine against infectious coryza of serotypes A, B and C to 200 birds of combat. The lines studied were Leiper Hatch, Blueface, Yellow leg, Radio, Money and crosses of these in mixed flock. The vaccine was applied at three weeks of age with a booster application two weeks (5 weeks old). The route of administration was intramuscular in the breast, in doses of 0.5 ml/animal. The vaccine was stored at a temperature between 4 and 8 °C, avoiding exposure to sunlight. Before applying the vaccine was stirred until blended and applied to a temperature of 20 °C. Of the 200 animals that were administered the vaccine, we obtained a 69% mortality attributable to infectious coryza, but 5% of mortality from other causes. The survival rate was found 28.5% (27 females and 30 males), of which 5 females and 20 males were one-eyed.

Infectious Coryza, Vaccine, Combat Birds

Citation: CARRILLO-DÍAZ, Fernando, MACÍAS-CORONEL, Humberto, SALGADO-MORENO, Socorro and MARTÍNEZ-GONZÁLEZ, Sergio. A Case of Inactivated Commercial Vaccine Functionality against Infectious Coryza Serotypes A, B and C *(Avibacterium Paragallinarum)* in Birds of Combat. ECORFAN Journal-Republic of Guatemala 2017, 3-5: 12-15.

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1. Introduction

Biosecurity is the set of management practices designed to prevent the entry and transmission of pathogens that may affect health on farms. It is a fundamental part of any poultry business, as it provides an increase in the productivity of the flock and an increase in economic performance (Ricaurte, 2006). Infectious coryza is an infectious-contagious respiratory disease of several species of birds, whose responsible etiological agent is the bacterium Haemophilus paragallinarum (Rajurkar et al., 2009).

The disease is characterized by producing conjunctivitis, sinusitis, periorbital inflammation and nasal discharge, being common the complications with independent gram-negative microorganisms, which facilitate the magnitude of the injuries to the whole respiratory system and other internal organs, in this situation a more severe disease, called complicated coryza, which can cause high mortality (García, 2000).

The economic impact of the infection by this bacterium lies in the losses that it causes to poultry, due to growth retardation, weight loss, increase in the number of birds eliminated and predisposition to complicated chronic respiratory disease (Vargas and Terzolo, 2004). This disease is a frequent clinical problem, especially in chickens that are intended for posture, while in classic, uncomplicated coryza, lesions are generally confined to the upper respiratory tract. Sinusitis may be associated with inflammation of chins, conjunctivitis or keratitis (Colas et al., 2011).

It seems inappropriate to pay attention to the old, tired and repeated problem of infectious coryza. However, the fact remains that it remains a serious problem for the poultry industries in many countries, despite the widespread use of commercial vaccines (Bragg, 2003).

Since the bacteria that cause this old disease continue to appear and worrying, although much more is known about it than when it was first described in 1931. Its weakness and extreme adaptation to the chicken, as well as its inability to survive outside the host, indicated a real way to control it (Bickford, 1979).

The protection and control of infectious coryza, in chickens mainly, is through the use of vaccines containing inactivated bacteria of the disease (Dávila, 2010). The vaccines that the different laboratories produce are subject to strict quality controls and have made an effort to offer the resource required by the different epidemiological conditions, whether they are alive or dead, alone or combined, of different degrees of invasion, with variants or simple, of standardized or autochthonous strains, cloned and without cloning; lyophilized, frozen, etc. This great variety makes it easier to choose the most appropriate one (Flor, 2007).

2. Medical history

The present work was carried out in the farm "Caminera" in Tepic Nayarit. The reason is that year after year the problem of infectious coryza has been presented, and although medicines such as tylosin, tiamulin and sulfas have been used among others, this causes excessive expenditure, so, to reduce economic losses, the The cost of the vaccine was the best option and it was expected that this would protect the flock, therefore it was decided to apply a commercial vaccine against infectious coryza. At the time of application no bird showed signs of the disease.

The macroscopic findings were tearing, inflamed eye orbits, loss of one eye being blind or blind, see Figure 1. On the other hand, nasal discharge, sneezing and facial inflammation were observed, as well as growth retardation, weight loss and predisposition to Complicated chronic respiratory disease (Welchman et al., 2010).

ISSN-On line: 2414-8849

The findings at necropsy were similar to those described by Welchman et al, (2010), such as mucus in the trachea, swelling of the infraorbital sinuses accompanied by congestion of the mucous membranes of the nasal cavity and paranasal sinuses and the formation of an excess of mucus.

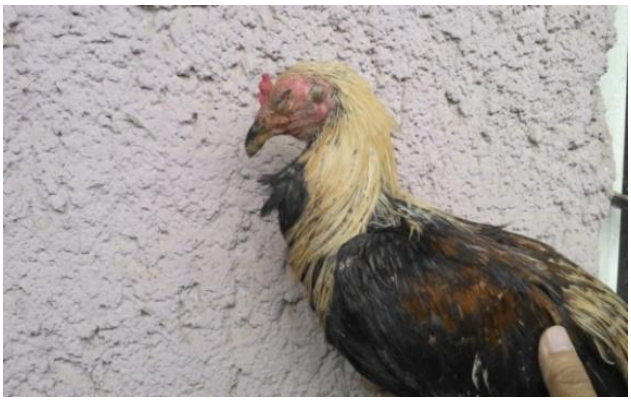

Figure 1 Fighting chicken with signs of infectious coryza

For the diagnosis, clinical signs and necropsy findings presented by the birds were taken into account together with the clinical history of the disease, which quickly spread in the geographical area where the infectious coryza is the main manifestation. In addition, microbial samples (exudates) were taken from the nasal sinuses of sick birds, using cotton swabs and subsequently inoculated, through nasal route, to 5 healthy birds (Calnek, 2000). The five birds were kept under observation and isolated from the rest of the group, and the coryza was produced 48 hours after inoculation.

As treatment, an avian bacterin in aqueous suspension was used, which contains cultures in artificial medium of avibacterium paragallinarum serotypes A, B and C, inactivated. This bacterin is used as an aid in the prevention of infectious coryza of commercial poultry. The route of administration was by intramuscular injection in the breast, in birds older than 3 weeks of age with doses of 0.5 ml per animal. The vaccine was stored at a temperature between 4 and 8 ° C.

It was applied at a temperature of 20 ° C, avoiding exposure to sunlight at all times. It was stirred well before being used until a homogeneous mixture was obtained. Two weeks after the first application, the reinforcement was administered. The vaccine was applied to 200 fighter birds of the lines Leiper-hatch, Blueface, Yellow leg, Radio, Gyros and crosses of these in mixed flock.

3. Discussion and Comments

Of the 200 animals that received the vaccine, a mortality of 69% attributable to the infectious coryza was obtained, plus a 5% mortality from other causes. The survival obtained was 28.5% (27 females and 30 males), of which 5 females and 20 males were one-eyed.

Rajukar et al (2009) mention that the complications of infectious coryza can be determined by stress factors. The natural temperament of fighter birds leads to a state of significant stress, which could determine the lack of effectiveness of the vaccine.

A possible complication of the infectious coryza with other bacterial or viral infections should also be taken (Welchaman et al., 2010), as in the complication with Mycoplasma Gallisepticum (Abd El-Ghany, 2011), which may have not allowed the effect favorable vaccine. On the other hand it can be thought that the presentation of the infectious coryza was caused by a local strain, against which the vaccine used had no effect. Blackall (1999) comments that commercial vaccines are produced in an international standard against inactivated strains of Avibacterium paragallinarum, but vaccines do not protect against local variants of Avibacterium paragallinarum, implying the need to produce vaccines specific to the region (-Ghany, 2011).

ISSN-On line: 2414-8849

4. Conclusions and recommendations

The vaccine did not meet the expectations expected in the protection against avian infectious coryza disease in fighting birds. However, it is important to check the cold chain to make sure that the vaccine management is adequate. It is recommended to apply the vaccine, experimentally, in a sample that is representative of the total number of birds and wait up to a week, and depending on the result, make the application to the entire flock, in order to reduce costs.

The birds of battle if they lose an eye are waste animals for which the economic losses in this operation were large.

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ISSN-On line: 2414-8849

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