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SEROLOGICAL SCREENING FOR AVIAN REOVIROSIS

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Abstract

Reovirus infection are infectious diseases and intensive poultry farming affects, mainly, broilers, evolving or as malabsorbtion syndrome or syndrome as arthritis, tenosynovitis.
The investigations were made in order to determine seroprevalence of these infections in seven broiler farms west. Blood samples were taken from chickens aged 21 days (R1) and 37 days (R2). Specific antibodies were detected by ELISA (Enzyme Linked Immunosorbent Assay) kit using FlockChek ® Avian reovirus Antibody Test Kit , supplied by IDDEXX Laboratories , Inc.
At the age of 21 days geometric mean titres have different values , limits ranging between 245 and 607 O.D. At the age of 37 days , the geometric mean of specific antibody titers were higher limits ranging between 89 and 773 O.D.
The results obtained demonstrating the existence of seroconversion proces is the result of evolution reovirus infection in broiler farms investigated.

Keywords: *broiler, reovirus infection, seroconversion proces.*

INTRODUCTION

Reovirus infections in poultry and turkeys, are widespread in many countries are considered the specific infectious diseases intensive poultry farming with endemic evolution.
OLSON et al, in 1957, described arthritis and tenosynovitis, in broilers, and DALTON et al, in 1967 proposed the term tenosynovitis to name these conditions (Jones,2000; Robertson, Wilcox , 1986).
KOUWENHOVEN, in 1978, in the Netherlands, described, all in broilers a clinical form with digestive localization, as the ” malabsorbtion syndrome” (Jones, 2000; Robertson, Wilcox , 1986).
It was later shown that avian reovirus isolated by WALKER et al., is the etiologic agent of the two syndromes evolving in broilers (Jones,2008;).
Intesive commerce with poultry material contributed to the spread of the infections with avian reovirus, and after 1990, these infections diseases frequently evolving in our country (Cătană et al., 2008; Robertson, Wilcox , 1986).
The research has been made in order to determine the seroprevalence of these infections in six broiler farms in western country.

MATERIALS AND METHODS

For establishing the seroprevalence of reovirus infections, in broiler farms was performed serological exams , the specific antibodies were detected by ELISA (Enzyme Linked Imunosorbent Assay) using Flock Chek Kit Avian Reovirus Antibody Test Kit supplied by IDEXX Laboratories Inc.
Blood samples were taken from chickens at the age of 21 days (R1) at the age of 35 days (R2) , each 25 samples at each sampling.

RESULTS AND DISCUSSIONS

The results from serological tests are shown in Table 1. The software kit used has established the titer group’s, minimum titer, maximum titre and geometric mean of antibody titers and their values were expressed in optical density (O.D.).

In broilers aged 21 days (R1) has been detected antireovirus antibodies having the minimum titer between 18 O.D. and 264 O.D. and maximum titer between 863 O.D. and 1863 O.D. and geometric mean values were between 245 O.D. and 607 O.D.
In broilers aged 35 days (R2) has been detected antireovirus antibodies having the minimum titer between 12 O.D. and 364 O.D. and maximum titer between 1453 O.D. and 3256 O.D. and geometric mean values were between 89 O.D. and 773 O.D.

Table1.The serological examination results

Farms	R1				R2			
	1	2	3	4	1	2	3	4
1.	3	1022	63	245	2	1453	12	89
2.	2	986	18	526	4	2164	264	648
3.	3	1163	112	467	5	2860	364	643
4.	4	863	264	307	5	3063	204	670
5.	3	948	114	367	6	3256	364	673
6.	4	1863	264	607	5	3163	264	775
7.	3	1399	136	453	5	2594	358	519

Legend: 1: titer groups; 2: maximum titers; 3: minimum titers; 4: geometric mean titers.

The results of serological exams demonstrate the presence of reovirus infection in broiler farms investigated confirming the suspicion, epidemiologic and clinical established. In these farms has evolved the avian reovirosis with the two characteritsic syndromes, malabsorbtion syndrome and arthritis - tenosynovitis.
Analyzing the minimum and maximum titers and geometric mean these imunological parameters evolved dynamically, while broiler age.
At the ages of 21 days specific antibody titers were low due to progressive exhaustion, they are antibodies yolk, chicken flocks from breeding hens vaccinated. After this age, chickens were not imunologically protected and were infected with avian reovirus existing in farms. In avian reovirosis the infection is horizontal and vertical phenomenon shown by many researchers (Jones,2000; Robertson, Wilcox, 1986).
At the ages of 35 days specific antibody titers had high values wich shows existence of the phenomenon specific seroconversion of postinfectious immune response, as a result of the clinical course of the two syndromes.
The obtained results confirm the suspicion of both epidemiological and clinical syndromes of avian reovirosis in chicken flocks investigated.
Postinfectious immune response confirmed the values of maximum titers of specific antibodies have been shown by other researchers as characteristic of these infections (Jones, 2000; Jones, 2008).

CONCLUSIONS

Serological examination conducted by ELISA, revealed the presence of antireovirus antibodies whose titers had different values by age of broilers.
At the age of 21 days in broilers the titers were low due to the exhaustion of yolk antibody titers after the vaccine.
At the age of 35 days, the antibodies showed high values, titers obtained showing an immune response after infection.
Serological examination confirmed the evolution of avian reovirosis in broiler flocks from controlled farms.

REFERENCES

Cătană N., Popa Virgilia, Herman V., Fodor Ionica, 2008. Cercetări anatomoclinice şi serologice într-un focar de reoviroză la puii de carne.Lucr. Şt.Med.Vet. Iaşi, 51(10),685-689.

Jones R.C., 2000. Avian reovirus infection.Revue Scientifique et technique, 19,614-625.

Jones R.C., 2008. Viral arthritis. In: Diseases of Poultry, 12th Edition, Editor in chief SAIF I.M., Ed. Blackwell Publishing, Ames, Iowa, 310-322.

Robertson M.D., Wilcox G.E., 1986. Avian reovirus.Vet. Bul.,56,155-174.

Robertson M.D., Wilcox G.E., Kibenge F.S.B., 1984. Prevalence of reoviruses in commercial chickens. Aus. Vet. J. 61;319-322.