

Seroprevalence Studies on EGG Drop Syndrome-76 Virus in Southren Part of India (Kerala)

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Abstract: The present seroprevalence of EDS-76 by HI test revealed widespread distribution of EDS-76 antibodies in layer chicken in Kerala, India. Out of 615 sera samples tested by HI test, 58 samples found to be positive for EDS-76 virus antibodies. The overall prevalence of EDS-76 antibodies in Kerala was 9.43 %. The attempts for virus isolation from clinical materials were failed.

Key words: Seroprevalence, EGG drop syndrome-76, haemagglutination inhibition test

INTRODUCTION

EGG drop syndrome-76 is an economically important viral disease of laying hens, characterized by a drop in EGG production and EGGshell defects and the virus can be transmitted through eggs^[1]. Egg drop syndrome-76 virus belongs to the family *Adenoviridae* and is classified under the genus, *Aviadenovirus*. Mohanty *et al.*^[2] conducted a serological survey of layer flocks in different parts of India during 1980 to 1983 and reported EDS-76 as a widespread condition associated with fall in EGG production. In Kerala antibodies against EDS-76 were found in pigeons and house crows^[3] duck and chicken^[4,3] by Haemagglutination (HI) test. The present study was conducted to estimate the seroprevalence of EDS-76 among layer chicken in Kerala.

The EDS-76 virus (strain 127 of UK), which was maintained in Department of Microbiology, College of Veterinary and Animal Sciences, Thrissur, Kerala was used as a reference virus. The EDS-76 virus grown in embryonated duck EGGs was used as antigen for raising hyperimmune serum. The antisera were prepared as per the method of Mohanty *et al.*^[2] with the slight modifications. Antisera were heat inactivated at 56° C for 30 min and stored at -20° C.

Sera samples were collected randomly from layers at nine organized layer poultry farms situated in various districts of Kerala. A total of 615 sera samples were collected randomly from apparently healthy layers, irrespective of age. Sera samples were screened for EDS-76 by HI test and the test was carried out as per the method^[5].

Table 1: Seroprevalence of EDS-76 virus in chicken in kerala

Farm	Total number of samples screened	HI	
		Number positive	Percentage positive
RPF*, Malampuzha	28	3	10.71
RPF*, Kodapanakunnu	20	2	10.00
KSPDC**, Kodapanakunnu	52	3	5.77
RPF*, Koovapadi	68	9	13.23
UPF*, Mannuthy	105	15	14.28
RPF*, Chathamangalam	65	8	12.31
RPF*, Mundayad	80	6	7.5
RPF*, Manarkad	95	6	6.31
Central Hatchery, Chengannoor	98	4	4.08
Department of Microbiology	4	2	50
Total	615	58	9.43

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The present investigation revealed the presence HI antibodies against EDS-76 virus in Kerala. The HI antibody titre of 8 (3 log₂) or above was considered as positive in the present study. A total of 58 out of 615 samples found to be positive for EDS-76. The overall prevalence of EDS-76 antibodies in Kerala was 9.43% as against 14.91 reported earlier^[4]. The farm wise incidence of seropositive samples ranged from 4.08 to 14.28% and is shown in Table 1.

Attempts for isolation of EDS-76 virus were not successful. Since no vaccination was carried out in most

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of the farms, the failure of virus isolation and the presence of antibodies indicated inapparent infection of EDS-76 virus among layer chicken in Kerala. The present study suggested the widespread infection of EDS-76 in chicken in Kerala and vaccination of the chicken is warranted.

REFERENCES

1. McFerran, J.B., R.M. McCracken, E.R. McKillop, M.S. McNulty and D.S. Collins, 1978. Studies on a depressed EGG production syndrome in Northern Ireland. *Avian Pathol.*, 7: 35-47.
2. Mohanty, G.C., K.C. Verma, H.K. Pradhan and R. Kumar, 1984. EGG drop syndrome-76 (EDS-76) in India, Seroprevalence of EDS-76 virus infection in poultry flocks. *Indian J. Poultry Sci.*, 19: 15-18.
3. Sulochana, S. and D. Sudharma, 1987. Seroprevalence of EGG drop syndrome virus infection in domestic and free flying birds in Kerala. *Kerala J. Vet. Sci.*, 18: 83-88.
4. Priya, P.M., G.K. Nair, M. Mini and V. Jayaprakas, 2001. Comparison of haemagglutination inhibition test and indirect elisa for detecting EDS-76 antibodies in chicken and ducks. *Indian J. Poultry Sci.*, 36: 326-328.
5. McFerran, J.B., H.M. Rowley, M.S. McNulty and L.J. Montgomery, 1977. Serological studies on flocks showing depressed EGG production. *Avian Pathol.*, 6: 405-413.