IMMUNE RESPONSE IN CHICKS AGAINST SALMONELLOSIS

BY

N. Daniel Joy Chandran, B VSC.,

Thesis submitted to
The Tamil Nadu Agricultural University, Coimbatore
in Partial Fulfilment of the requirements
for the degree of

Master of Veterinary Science
(IN MICROBIOLOGY)

Department of Microbiology and Biochemistry

MADRAS VETERINARY COLLEGE
TAMILNADU AGRICULTURAL UNIVERSITY
COIMBATORE

1981

Certificate

This is to certify that the thesis entitled "IMMUNE RESPONSE IN CHICKS AGAINST SALMONELLOSIS" submitted in partial fulfilment of the requirements for the degree of Master of Veterinary Science, in Veterinary Microbiology to the Tamil Nadu Agricultural University, Coimbatore, is a record of bonafide research work carried out by N. DANIEL JOY CHANDRAN, under my supervision and guidance and that no part of this thesis has been submitted for the award of any other degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part or full in any scientific or popular journal or magazine.

Date: August 31, 1981

Place: Madras 600 007

R.A. BALAPRAKASAM
Chairman

Approved by Chairman:

(R.A. BALAPRAKASAM)

Members:

(.....)

(.....)

(.....)

VI SUMMARY

Birds were immunised with live vaccine, live Freund's complete adjuvant vaccines, killed vaccine and the killed Freund's complete adjuvant vaccine, incorporating the avirulent strains of S.gallinarum 9R and S.enteritidis E20. Live adjuvant and live vaccines produced immunity in chickens which withstood a challenge of virulent strain of S.gallinarum V.

HA test performed in the sera collected during the post-vaccination and post-challenge periods clearly demonstrated the degree of disease or infection process due to live or live-adjuvant vaccine rather than immunity as seen by challenge test. Hence HA could be favourably used for the diagnosis of Salmonellosis.

Electrophoretic analysis of the immune sera showed an increase of circulating gamma globulin indicating the production of humoral antibodies following inoculation of S.gallinarum 9R and S.enteritidis E20 in chickens.

Macrophage migration inhibition index was estimated in the spleen collected during post-vaccination and post-challenge periods. The macrophage inhibition indices correlated well with the results of challenge test showing that the CMI response was found to be protective in nature.