CHAPTER I

INTRODUCTION

Fowl Cholera, an avian-attracking disease, is caused by bacterial infection with Pasteurella multocida. It occurs sporadically or enzootically in world wide. The disease is of major economic importance. The effective prevention can be achieved by vaccination and good sanitation. In Thailand an outbreak of duck cholera is one of the major causes of high mortality rate among ducks. Vaccine generally used in our country is a killed vaccine produced by Department of Livestock Development. It has been prepared from a local strain, serotype 8:A in Namioka's typing system which corresponds with Heddleston's type 3 (1,2). However, this vaccine must be administered by I.M. injection every 3 months, that may cause stress in ducks and a drop in their egg production. Moreover, the protective effect of this vaccine is not truely satisfied. This may due to the recent study of Unchitti (3) which found that there was a suspicion in serotype of the local strain.

At present, in the United States the CU live vaccine is more widely used than the killed vaccine. Live vaccine induces not only more reliable immunity than those bacterin but it also gives cross-protective immunity for broad range of P.multocida serotypes (4). The vaccine administered in drinking water was immunologically less effective in chicken than turkey. It is as more effective in chicken only by wingweb or SC inoculation than in drinking water and chickens require higher dose than turkeys (5). However a relatively high mortality has occasionally been observed, especially when the birds are under undefined stress conditions (6,7).

Besides chickens and turkeys, studies in other birds (8) such as bobwhites, coturnix Quail, guinea fowl and mallards have been reported, except ducks.

The objectives of this research are :

1) to study the growth of P.multocida : CU strain
2) to study the virulence of P.multocida : CU strain in duck aged 1-4 weeks
3) to study the protective immunity of live cholera vaccine : CU strain in ducks
4) to examine the difference of antibody levels detected by 3 types of antigen (ie. autoclaved antigen, capsular antigen, sonicated cell antigen) prepared from both the 8:A strain and CU strain.