

Haemagglutination and Haemagglutination Inhibition Test in Newcastle Disease.

Piya Chaiyasithiyuthaparn, B. V. Sc.

Dept. of Animal Development,

Min. of Agriculture.

(SUMMARY OF THE FOREGOING ARTICLE)

Experiments were carried out to prove the diagnostic value of the haemagglutination inhibition test in Newcastle disease. With the former the presence of virus in blood or exudate of sick birds or in organ material of dead birds was to be demonstrated; while the latter supplied a means of identifying the virus as Newcastle disease virus.

The antigens for both tests had to be freshly prepared and free from contamination. The virus was obtained from infected material—blood, tracheal exudate or feces of living birds, bone marrow or spleen of dead birds—usually on the third day after the onset of the disease which was suspected to be Newcastle disease, former experiments having proved that the virus concentration was greatest on the third day.

The red blood cells were taken from chickens which had never contacted any kind of contagious disease. Sodium citrate (2.5–5%) was used to prevent clotting (1 cc. per 10 cc. blood). The mixture was centrifuged at 900 r.p.m. for 5 minutes to separate the r.b.c. Physiological saline solution was used to wash four times and to prepare a 0.75% r.b.c. dilution.

The saline solution used was 0.85% Sodium chloride (C.P.) or buffered saline (pH 7.1–7.2).

The immune serum was obtained from birds which had recovered from Newcastle disease and which were subsequently injected with 5 and 10 cc. of virulent Newcastle virus at an interval of 7 or 10 days.

Results: the experiments have shown that it is possible to make accurate readings of the degree of the agglutination of the red blood cells. The haemagglutination titre of one local strain of virulent Newcastle disease virus was found to be 1:1280.

The haemagglutination inhibition titre of the serum of one hyperimmunized hen was shown to be 1:640.

In control experiments red blood cells were not agglutinated by normal serum obtained from healthy birds.

The need for carefully and freshly preparing the antigens is stressed in order to render the tests useful for the diagnosis of Newcastle Disease.