

## IDENTIFICATION OF PATHOGENIC *ESCHERICHIA COLI* ASSOCIATED WITH POULTRY

T.G. WIJewardane\*, D.R.A. DISSANAYAKE AND W.B.A.B. WANIGASINGHE

*Department of Pathobiology, Faculty of Veterinary Medicine and Animal Science,  
University of Peradeniya, Peradeniya.*

Avian pathogenic *Escherichia coli* causes a variety of infections in chicken and is difficult to differentiate from commensals. Besides causing diseases in chicken certain strains of *E. coli* can cause food borne diseases in humans.

Objectives of this study were to differentiate pathogenic and non pathogenic *E. coli* strains present in poultry and to investigate the possible contamination of poultry meat by *E. coli* O:157:H7 which is considered as a food borne pathogen.

Heart blood, long bone, liver, spleen and ova from clinically affected birds and cloacal and faecal swabs from healthy birds were cultured on Mac Conkey and Sorbitol Mac Conkey agar. Lactose fermenting colonies on Mac Conkey agar and sorbitol non-fermenting colonies on Sorbitol Mac Conkey agar were selected and 14 biochemical tests were performed. Sorbitol non-fermenting colonies were subjected to O:157 latex agglutination test. Fermentation of sugars especially salicin, dulcitol and raffinose were considered as indicators of pathogenicity. A total of 70 *E. coli* isolates, of which 25 from clinically affected birds, 16 from processing plants, 5 from day old chicks and 24 faecal and cloacal isolates from healthy birds were studied.

Of 25 clinical isolates 64%, 16%, 12% fermented salicin, dulcitol and raffinose respectively while all bone marrow isolates (11) rapidly fermented these 3 sugars. All *E. coli* isolates obtained from bone marrow were pathogenic thus qualifying it as the ideal site for collecting samples in colisepticemia. Seven of 24 faecal isolates (29.2%) fermented salicin, 16 (66.7%) fermented dulcitol and 14 (41.6%) fermented raffinose. Clinical and faecal isolates of *E. coli* have shown certain differences in their ability to ferment salicin, dulcitol and raffinose. However, the fermentation of these sugars alone cannot be used as a marker for discriminating between pathogenic and commensal *E. coli*. It has to be coupled with other tests such as agglutinability of isolates with specific antisera. This is an ongoing project and further tests (serotyping and  $\beta$  glucuronidase activity) will be carried out in future. One isolate of faecal *E. coli* (1.4%) belonged to the serotype O:157 H:7, a shiga toxin producing *E. coli*, which is causing a diarrhoeal disease and hemorrhagic colitis in human.

This is the first report of detection of this strain in poultry in Sri Lanka.

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