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**ISOLATION AND IDENTIFICATION OF
SALMONELLA FROM POULTRY BREEDER
PULLORUM-TYPHOID REACTORS**



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Abstract

Salmonellosis is an infectious disease of humans and animals caused by the genus *Salmonella*. The disease can affect all species of domestic animals and human. The *Salmonella* infected poultry parents transmit the organism to next generation by vertically or horizontally. The Department of Animal Production and Health conducts "Salmonella control program in breeder farms" in order to prevent *Salmonella* infected chicks being introduced to commercial farms. The reactors identified by whole blood agglutination test are slaughtered but, still the *Salmonella* is a problem to the poultry industry in Sri Lanka. The main objective of this study was to isolate and identify serotypes of *Salmonella* in breeder reactors. The research included two phases. They were the isolation and identification of *Salmonella* serotypes in reactors in breeder farms and progeny in the hatchery. A total of 3022 birds were screened by the whole blood agglutination test to identify reactors and four breeder farms were selected for the study. There were 128 reactors and, 11 of them were slaughtered for the collection of tissue samples from liver, spleen, gall-bladder, ovary, oviduct, cecal tonsils and cecum and, tissue samples were pooled at each sample collections. The other samples collected from farms were eggs and drag swabs. The samples collected from hatchery were organ pool of dead chicks, fluff, meconium and eggs. *Salmonella* Enteritidis (SE) was isolated from tissues samples of reactors in three farms. The samples from eggs and drag swabs were negative for *Salmonella*. Two hatcheries were positive for SE and the isolated samples were from meconium and organ pool. This research emphasizes there are

Salmonella Enteritidis infected parent stocks in Sri Lanka. The screening and culling program practiced in breeder farms, has removed SE carriers as well. This study re-emphasizes that the whole blood agglutination test is a good rapid method to detect carriers, though there is a possibility of a few false positive reactions and, S Pullorum/ Gallinarum antigen still can be used to identify SE carriers. The tissue samples from reactors are better than eggs and drag swabs. The isolation of SE from hatcheries of infected farms indicates the egg transmission of SE and the possibility of contamination of hatchery. The meconium and organ pool are better samples for isolation of *Salmonella* from the hatchery. This study identified the importance of isolation and identification of serotypes of *Salmonella*. If *Salmonella* is isolated from a breeder farm it can be considered as *Salmonella* infected breeder farm but, if it is not isolated repeated sampling should be carried out to declare that the farm is free of *Salmonella*. The attention should be focused on the public health significance of the presence of SE carriers in breeder farms because SE infected chicks may be distributed throughout Sri Lanka.

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